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ORGANIZATIONAL EFFECTIVENESS: DEVELOPMENT  
AND VALIDATION OF INTEGRATED MODELS

REPORT I:

DEVELOPMENT OF AN INTEGRATED MULTIVARIATE  
MODEL OF ORGANIZATIONAL EFFECTIVENESS

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differential concern about these organizational problems among constituencies of unlike value priorities. Chapter 4 treats organizational environments and argues that the appropriate criteria for assessing organizational effectiveness are contingent upon the turbulence and episodic character of the environments as well as upon the zones of concurrence and contest among constituencies in such environments. The final chapter reviews the contemporary empirical literature employing indicators of organizational effectiveness, concluding that the contemporary practice is grossly deficient both in conception and in application.

The appendix contains brief abstracts of documents relating to organizational effectiveness. Thirty-three documents are abstracted to represent contemporary theoretical and conceptual contributions. Seventy-six are abstracted to represent contemporary empirical practice. Inclusion is selective, to emphasize divergent and innovative views and practices rather than prevailing ones.

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ORGANIZATIONAL EFFECTIVENESS: DEVELOPMENT AND VALIDATION OF  
INTEGRATED MODELS

REPORT I: DEVELOPMENT OF AN INTEGRATED MULTIVARIATE  
MODEL OF ORGANIZATIONAL EFFECTIVENESS

EXECUTIVE SUMMARY

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Requirement:

To attempt to formulate a means for the integration and joint application of contemporary models of organizational effectiveness which heretofore have been treated, generally, as if they were incompatible alternatives.

Procedures:

A team of eight researchers concerned with organizational theory development engaged in a year-long period of literature review, discussion, analysis of archived data, and writing. No new field or laboratory research was undertaken. An annotated bibliography of selected references was prepared (see appendix). Five sets of archived data were re-analyzed (three are summarized in Report II of this series). The theoretical product is contained in this present Report I of the series.

Findings:

Chapter 1 provides a general framework for the integration and joint application of three leading contemporary models of the construct "organizational effectiveness." These constituent models are described--the natural system model, the goal attainment model and the decision process model. It is shown that these models treat a common set of observable phenomena but with different orientations as to time frame, preferred criteria of effectiveness, and treatment of information about constituencies and environmental conditions. It is proposed that these models are not incompatible, but can be partially merged in practice, resulting in an integrated model of greater generality and scope than any one of the constituent models.

Chapter 2 explores the problems involved in validating such an integrated model, with the conclusion that internal validation is feasible with respect to the compatibility of the component models but not to "ultimate" validation. The latter limitation arises because the "ultimate" outcome of organizational activity is never known except in retrospect, and is then known only from differing value perspectives.

Chapter 3 displays an approach to the treatment of alternative and concurrent value premises displayed by the internal and external constituents of an organization. The approach involves, first, identifying the types of recurrent organizational problems (i.e. threats to the stable continuity of the organization) that arise from inherent aspects of organizations viewed as natural systems. Second, it is shown that different constituencies are linked to different problem types by their form of engagement with the organization--i.e. by their value premises. Third, there is illustrated (hypothetically) a means for employing these ideas as a diagnostic and predictive aid in adaptive response of organizations to changing conditions.

Chapter 4 addresses the concept of "organizational environment" with reference to the structure of constituencies and to the nature of turbulent episodes. The structure of external constituencies is analyzed as to their zones of concurrence (common interest), their zones of cooperation (mutual aid and non-conflict) and their zones of contest (incompatible interests). Environmental turbulence (instability, uncertainty), to which all organizations are exposed to some degree, is treated as a basis for assessing the relative importance of criteria of organizational effectiveness, with some trade-off considerations that are different for organizations exposed much, or little, to the threat of turbulent episodes. There are also "system effects" in response to turbulent episodes involving dynamics of oscillation or reverberation--effects which can be dampened by appropriate organizational structure and processes. The concepts introduced aim to facilitate the assessment of an organization's exposure to disturbance and capacity to respond positively.

Chapter 5 analyzes the contemporary empirical practices in the assessment of organizational effectiveness and finds them deficient in both theoretical foundations and in the sophistication of their application. Some recommendations for improved practice are offered.

The appendix contains an annotated bibliography of selected references, 33 of which represent contemporary theoretical and conceptual contributions and 76 of which represent contemporary empirical practice.

#### Utilization of Findings:

The integrated model described in this report, and the logic which led to the formulation of the model, will be used to guide the development of measurement technology which will enable quantification of the dimensions of organizational process performance hypothesized in the model to be causally linked to dimensions of outcome performance which are conventionally used to measure organizational effectiveness. To the extent that such causal links are found in future research, such information will influence policy and doctrine bearing on the issue of combat readiness and operational assessment of combat readiness.

REPORT I: DEVELOPMENT OF AN INTEGRATED MULTIVARIATE  
MODEL OF ORGANIZATIONAL EFFECTIVENESS

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## I. FRAMEWORK FOR AN INTEGRATED MODEL OF ORGANIZATIONAL EFFECTIVENESS

Stanley E. Seashore

This chapter will display a rather comprehensive schema designed to show the several classes of criteria that may be taken into account in assessing organizational effectiveness. To avoid producing another incoherent laundry list of effectiveness indicators, the schema will attempt to acknowledge the contributions of three distinctive theoretical approaches and will leave the door open to accommodate the extensions and variations which will certainly arise. The aim is not to produce a neat, unified theory about, or a new definition of, the elusive concept of effectiveness, but rather to produce a framework that will aid coherent thought and judicious action by those who are compelled by their leadership roles or their research tasks to choose a definition of effectiveness which suits their unique purposes.

The orientation taken is, in part, sociological. That is, it will treat the symbiotic relationships between an organization and its environment of organized and unorganized constituencies. Constituents are persons, acting in their own interest or as representatives of others, and having some form of interdependency with the focal organization of study. In this inclusive sense, they are "members" of the organization with needs--their own and of others--to be fulfilled.

The orientation taken is, in part, that derived from general systems theory as applied to human organizations. It will be assumed that human organizations share certain universal characteristics of behaving entities, with internally determined capacities and priorities that control their responsiveness to environmental factors.

The orientation is, in part, individualistic and psychological. That is, organizations come into being and are maintained by the activities of persons who are not only members of the organization but simultaneously are persons with attributes and self identifications that are not derived from nor wholly integrated with their organization. This notion of "partial inclusion" is crucial, for it locates and defines a boundary region of organizations that must be taken into account.

The orientation is, in part, cybernetic, by which we mean the analysis of systems for selective use of information in the choice and decision making activities of organizations to the ends of internal direction and control and of external accommodations.

The orientation is unmistakably practical. For persons in constituency roles to choose behaviors that approximate an optimization of those roles, they must continually evaluate the effectiveness of the focal

organization and assess its likely future effectiveness. Such evaluations require the selection of effectiveness criteria which are pertinent to the immediate and longer-run interests of the constituency.

This chapter will have three parts. The first will outline a way to merge considerations of effectiveness from three perspectives--i.e., from the perspectives of systemic integrity, goal attainment, and decision-making competence. The second part will comment upon the concept of "integration". The final pages will discuss some properties of advantage and limitation in this approach to the assessment of organizational effectiveness.

#### MERGING CONTEMPORARY THEORIES

Many people distinguish three main approaches to the understanding of organizational effectiveness. One views an organization as a natural system having its own survival and growth requirements and its own internal dynamics of activity and change. Another views the organization as a contrived instrument for attainment of specified short-run goals. A third approach treats the organization as an information processing and decision making entity, with a focus upon factors of organizational control and direction. These are loosely labelled the natural system model, the goal model, and the decision process model. We will argue that they are not incompatible and can be treated jointly within a common linking framework.

The approaches are seemingly conflicting in a number of ways. They take different views about the nature and origin of organizational purposes or goals. They take different views of the nature of the relationships between an organization and its environment. They require, for application, measurement of unlike aspects of organizational performances and unlike models for their interpretation.

##### The Natural System Model

The core image of an organization in the natural system approach is that of an intact behaving entity, autonomous except for interdependence with an environment in the form of information and energy exchanges. A source of this conception is a general systems theory, which seeks equivalencies across an array of behaving systems ranging from the single biological cell to the whole of complex societies. The derivation relevant to formal human work organizations has the name open systems theory. The central propositions of this theory are concerned with system boundaries, differentiation and integration of the sub-systems that are "parts" of the focal system, input-transformation-output processes, boundary transactions, and system maintenance processes. There exist several good statements and elaborations of this theory, notably those of Baker (1973), Georgopoulos (1979), and of Katz and Kahn (1978).

There are a number of variants upon these central themes, and illustrative examples are warranted. Georgopoulos has worked out a scheme for assessment and description of work organizations based on the idea that all organizations share a small number of "basic problems" which must be

"continuously solved" (i.e., managed) for the organization to be effective; while these problems relate to work efficiency and output, all of them, such as coordination, and strain control, plainly derive from an image of the organization as a self-maintaining system in dynamic equilibrium within an environment. J. G. Miller (1978) regards formal organizations to be fundamentally goal-less in the sense that the systemic properties and processes are to be assessed, not narrowly with reference to outputs or end states, but more generally with reference to system equilibrium and maintenance.

There is some empirical support for such a view; for example, a factorial analysis of a roster of effectiveness indicators (chosen largely by top managers of the multi-unit firm) gave factors which were, in the main, interpretable as system maintenance and adaptivity factors rather than goal achievement factors (Seashore & Yuchtman, 1967). Other variants upon the natural system model incorporate the goal model in the sense that the focus is upon optimizing system-environment relationships: "effectiveness" implies the output of goods or services to the environment is of kinds and amounts that assure continuing and adequate inputs to the system.

The natural system model forces attention to certain aspects of organizational effectiveness which, until recently, were largely overlooked or undervalued: (1) The model suggests that effectiveness must be described and evaluated with reference to all attributes of the system that have some significant function in its adaptation, maintenance, and transformation processes; (2) There is a strong implication that effectiveness indicators must be treated as intact sets, not as indicators to be inherently and independently valued; (3) The model allows the idea that the meaning of a given indicator may be contingent in the sense that it may have different, or even opposite, value implications in different contexts; (4) Finally, the model moderates the distinction between "outcome" variables, on the one hand, and "causal" variables, on the other (except a matter of analytic strategy), for there is operating a network of linkages that may be causal in both directions.

#### The Goal Model

The goal model employs the clear assumption that there are definable purposes or goals, such that the effectiveness of an organization can be represented by the attainment of, or progress toward, these goals. Additional criteria may be invoked when there are instrumental goals or states necessary for attainment of main goals. An example of such a hierarchical model of organization goals has been formulated by Seashore (1965).

As in the case of the natural system model, several variants exist. The most prominent of these variants is that specifying economic goals, (e.g., work output, profit, growth) defined by the owner. Other variants emphasize emergent institutionalized goals sustained by the values of diverse constituencies and somewhat insulated from the purposes of the current leaders. Still others emphasize fluid change in goals as a consequence of continuous implicit negotiation among diverse influential individuals and coalitions (e.g., as in the March & Olsen [1976] "garbage can" theory of decision making).

The goal approach views an organization as an entity contrived and controlled to serve the purposes of the "leaders", including owners, managers, and all other key influentials. The purposes, of course, need not be selfishly individualistic, but may be altruistic, public spirited, expressive of societal norms, or goals chosen by consensus or compromise among members and other constituencies.

The goal model has utility. It directs attention to the seeming purposefulness of some organizations. It forces attention to the value perspectives and assumptions that lead to the dominance of some goals over others. It makes explicit the linkage of the organization to its value-laden environment. It provides a convenient analytic tool for mapping the causal relationships between antecedent conditions, instrumental goals and means, and the ultimate or highest priority goals--a property of high importance in the context of policy formation, decision making, and action.

It is currently fashionable to be critical of the goal model, on grounds that it does not fit well some observed characteristics of organizations. Goals appear to change in priority rather too easily; goal sets are often (always?) internally incompatible; organizational behavior often contradicts espoused goals; organizations often survive indefinitely or grow without ever realizing any of their espoused goals; it is often difficult or impossible to get responsible spokesmen to agree on the nature of an organization's goals; organizations often are observed to act first and then discover later a "goal" to justify what has happened.

These problems are put in perspective if one assumes, as we propose to do, that the goal model refers not to some goals that are inherent in the organizational system itself, but instead to goals of persons related in some way to the organization. Purposiveness, and goal formation, are thus to be regarded as psychological phenomena, external to the organization but forming a crucial aspect of its environment. When managers, owners, or other influential groups or categories of people, form their goals for an organization, these goals can become operative to the extent that they impinge upon the organization's processes for environmental exchange, accommodation, and self-maintenance. The goal model makes eminently good sense when viewed as a model for describing the purposive forces exerted upon the organizational system; it makes little or no sense when viewed as a model for self-generated purposiveness within organizational systems.

In short, we propose to put "goals" on the other side of the organization vs. environment dichotomy.

Some will think that the foregoing ideas are not consequential for understanding organizational effectiveness. For some applications in analysis or evaluation that is true, for the distinction becomes trivial when there is consensus among all influential goal sources--a condition likely to be found only in very small or very autonomous organizations where the person of an influential is indistinguishable from his or her organizational role and function.

### The Decision Process Model

The core image underlying the decision process model arises from the notion that organizations develop distinctive ways for employing information resources in the service of systemic integrity and goal attainment. These ways of dealing with information can be observed and measured; they can be assessed against criteria of intrinsic merit established by the logic of information usage; they can be assessed against "external" criteria of organizational outcomes or states in the domains of systemic integrity and goal attainment. In this context, an effective organization is one that optimizes the processes for getting, storing, retrieving, allocating, manipulating, interpreting, and discarding information. The effective organization is capable of accommodating a wide range of kinds of information. The effective organization has physical and human facilities capable of monitoring the quality of information and capable of the selective employment of information in problem solving and behavior controlling activity.

A number of people concerned about organizational effectiveness have focussed upon information management and decision making processes, and have done so from widely disparate disciplinary orientations. We will not attempt a census of contributions, but will give a few examples to illustrate the variety.

Gerald Hage (1974) is one of several who have offered cybernetic theories of organizational effectiveness. His book treats communication channels and networks, feedback loops, selective mobilization of information for specific uses, and the like; his treatment is highly evaluative, with reference to goal priorities, conflict resolution, forward planning, and system maintenance. His references to systemic integrity and goal attainment are explicit.

Others representing a behavioral approach to organizational decision processes include March and Simon (1958) on search behavior, limited rationality; Pettigrew (1973) on the political and power aspects of strategic decisions; Likert (1961) on participative, group-based decision processes. Argyris & Schon (1978) put the matter into a framework of organizational learning, in which they link individual-level choice processes to organizational norms and processes for information management. Weick (1979) suggests that certain "norms of disorganization" may facilitate problem solving within organizations. Vroom and Yetton (1973) prescribe optimizing decision rules for deciding how best to make decisions. Many others could be named. What they have in common is the view that organizations are, among other things, information processing and decision making entities which can be, and commonly are, evaluated against (1) rational standards of intrinsic goodness of decisions made, (2) appropriateness of decision process, or, (3) impact upon systemic integrity or goal attainment.

Collateral to the behavioral approaches to the effectiveness of organizational decision processes are those approaches focussing primarily on the behavior or data, not the behavior of persons. It is fair for the assessor of organizational effectiveness to note the extent and appropriateness of the use of mechanical, electronic, and statistical-mathematical decision aids. More, however, is not necessarily better.

Certain features of the decision process models of organizational effectiveness deserve note. They tend to emphasize dynamic processes over time. They tend to be oriented to future effectiveness (tomorrow, or next year, or the next decade) rather than to the recent past, compared with the goal attainment indicators which tend to be historical. While the systemic integrity models tend to emphasize continuity, stability, and homeostasis, the decision process models tend to emphasize change, adaptivity, and response to environmental intrusions.

The issue of fit of decision processes to the organization's situation is crucial and difficult, requiring differentiation among organizations as to their youth or maturity, whether in information-rich or information-poor environments, whether possessing a relatively stable or instable goal structure, whether embedded in a simple or a complex array of influential constituencies.

It is evident that the decision process model confronts the assessor of organizational effectiveness with a very large and diverse array of concepts and specific variables for measurement and evaluation. However, this is likewise true for the natural system and goal models. All three are amenable to simplifying hierarchical organization of concepts and to the devising of feasible operations for their measurement.

#### AN INTEGRATION OF MODELS

There is no need to choose one among the goal, natural system, and decision process models, rejecting the others, for they are not competitive as explanatory devices; instead, they are nicely complementary, referring to different but interdependent facets of organizational behavior. As aids in understanding organizational effectiveness they differ in scope and utility. The natural system model appears, from a researcher's perspective, the more comprehensive as it offers strong advantages as to ultimate convergence with related theories growing out of other disciplines. The suggested central role of the natural system model does not preclude the use and testing of propositions arising from the other models. The "integration" of the three is to be facilitated by restricting the use of the natural system model to the treatment of inherent systemic characteristics, and thus to effectiveness indicators such as adaptivity, viability, systemic integrity, and the like; by restricting the goal model to treatments of the goals imposed upon the organization by persons (or constituencies) acting in roles that are not integral to the focal organization; by restricting the decision process model to its own limited domain.

One may well ask what sort of an "integration" is proposed. It may seem to consist only of accepting all popular ideas and fitting them together in a patchwork design. When Pennings and Goodman (1977) took this route colleagues scolded them gently for doing so, but it may well be that the design need not be merely a patchwork. The "integration" may take at least two forms of interest and utility.

### Triangulation

Drawing upon a little optimism, and some confidence in the orderliness of Mother Natur-, one can assert that for most organizations, most of the time, there must be a state of compatibility among the three domains of effectiveness that have been described. Systemic integrity must exist in sufficient degree of balance among the component factors; goals must be attained to some sufficient degree--particularly those describable as system outputs of kinds that sustain resource input transactions; decision and control processes must be sufficiently appropriate and workable to deal with the problems relating to goal structures, systemic maintenance and the maintenance of a sufficiently efficient goal-oriented input-throughout-output system. Insufficiency in any one of these areas, or even a single subpart of any one, puts the organization at risk. Sufficiency, in each case, is to be defined with reference to the impact of each domain of effectiveness upon the other two. Assessment in all three domains, with cross reference, should provide some relief from the prevailing criticisms of both theorist and practitioner--that the natural system model does not say enough about goal attainment, that the goal model ignores significant organizational properties of predictive, diagnostic, and corrective importance, and that the decision process model has no topical content of a generalizable sort useful for assessing trends and making comparisons among organizations.

### Multiple Integrations

The term "effectiveness" is evaluative by definition and implies that some coherent set of interests and value preferences is brought to bear. An important contribution of open system theory has been the growing awareness of a need to take into account different value perspectives. These are of at least four general classes: (1) Perspectives arising from the interests of subordinate and superordinate organizational units, in large hierarchical organizations; (2) Perspectives arising from interests of members of the organization who import personal values and purposes that can, at best, be only partially reflected within the focal organization; (3) Perspectives arising from interests of "outside" persons or organizations of interdependence; and (4) Perspectives representing the general societal or public interest. This is a formal way of saying that organizational effectiveness can, and indeed must, be evaluated from the perspectives of different interested parties such as: people in higher echelons in the case of hierarchically-linked organizations (e.g., the Commanding Officer), members of the organization (e.g., managers, workers, labor union officers), exchange partners (e.g., suppliers, customers), and the general public (e.g., consumerism groups, EPA administrators, and the neighbors).

Organizations, as such, have no value perspective of "their own" even though they may take on properties compatible with some distinctive value priorities. The multiple value perspectives all arise outside of the organization, even though they may, in the case of members, be modified by the individual's experiences as a member. They are legitimated as factors in the assessment of organizational effectiveness to the extent that they are linked with persons or sets of co-acting persons having some power to establish or modify constraints upon what the focal organization may do or

try to do. The concept of "constituencies" thus takes on prime importance. The treatment of constituencies by Pennings and Goodman (1977) is illuminating in this context.

Constituents, then, as actors on the scene, are the principal "integrators". They integrate in unique ways, according to their respective value orientations, and transaction relationships to the focal organization, and within the limits of their information and analytic resources. The act of integration consists merely of attending simultaneously to those available effectiveness indicators that are thought relevant to the person's interests, and forming judgements as a basis for actions. Constituents are persons, although they may act and react as representatives of an organized constituency, or as statistical representatives of unorganized but like-minded constituents. Some constituencies--say dispersed product customers--may attend only to product availability, utility, and cost; others, such as employees, managers, or owners, will work with a richer array of effectiveness indicators, different sets of values, and with greater potential for imposing their goal preferences upon the organization. This is, of course, a rather untidy conception of how organizational effectiveness is assessed by the pertinent actors, but if that is the way the world operates we must accept it.

The researcher or theoretician is in a privileged position, as the value perspective applied may be one's own or someone else's. If one's own, the integration involves equal consideration of all three of the effectiveness domains I have described.

#### Members as Constituents

The schema that has been outlined clearly places members of an organization in roles as constituents, not as integral components of the organization itself. As constituents, members are differentiated from other constituents only by the comparative immediacy of their power to influence the organization and by their direct and value-laden concern with all three domains of organizational effectiveness. Like other constituents, they integrate evaluative information with reference to their own value perspectives, but commonly do so as members of organized constituency sets, or as representatives of unorganized but like-minded constituency sets. From the research perspective, the member-constituents are of unparalleled importance and utility, as they are readily observable in their behavior as constituents and, in addition, are qualified informants about other constituencies.

#### THEORETICAL ISSUES

In the offered framework, "organizational effectiveness" is treated as a name for a class of variables defined by their use in some descriptive or analytical context rather than by their autonomous definitional properties. Thus, "effectiveness" in a particular case is whatever some constituent, or some researcher making attributions to a constituency, says it is. This ambiguity of reference does not make the concept any less interesting, or

any less theoretically useful, but it does require that any given measure of effectiveness (or set of indicators) be regarded as a partial representation of the concept and, in any case, a representation of transient or historical phenomena. One may, and indeed must, make choices about which aspects of effectiveness are to be valued or examined; one must be explicit about the bases for choice and the risks of omission.

The model is not a "theory" in the hypothetico-deductive mode and thus does not contain fixed definitions and assumptions such that rules of logic require certain predictions of hypotheses and deny others. Theory must be imposed upon the framework. However, only those theories can be employed which are compatible with the conceptual framework. For example, the hypothesis "Individual member job satisfaction leads to (causes) organizational effectiveness" is not admissible because individual job satisfaction is itself a component of effectiveness. A modified hypotheses that "Individual job satisfaction causes high organizational productivity" is an acceptable (although dubious and uninteresting) proposition because it does conform to the internal structure and dynamics of the framework. The model does admit numerous predictions and hypotheses of a more general sort that, in principle, are testable. These pertain, for the most part, to changes in relationships over time as between component indicators from different domains, or to the consequences of different degrees of structure and differentiation among powerful constituencies.

The framework appears to be applicable to all types of organizations in all conceivable stages of development. This may be a deficiency rather than an advantage, as such universality points to insufficient detail and definition.

Two features of the model deserve special comment because they can have an impact upon future theoretical developments. One pertains to the location of the value systems that allow valuing of organizations. The other pertains to the sources of initiative for organizational changes.

The model specifies that organizational effectiveness is not a state inherent in "the organization itself", but is instead a relational construct, i.e., fit to needs and interests of constituencies. The relevant values are "outside" of the organization, and these multiple value systems are not assumed to be mutually compatible. Any assertions about the effectiveness of an organization need to specify the indicators employed, the value system(s) that prescribed their choice, and an identification or characterization of the constituency, (empirical or imagined) in which the value system is resident.

The model implies that judgements of absolute or relative effectiveness will thus be made by influential constituents and that action implications will follow. The notion of locating goal formation and change initiation "outside" of the organization will be troublesome for some theorists and a relief to others. Those of sociological bent will be glad to get rid of the people by calling them environment and classifying them by type. Those of psychological persuasion will welcome the invitation to treat

individuals in exchange relationships with organizations, and fulfilling roles in organizations, but not themselves defined as constituting the organization. The model assigns to constituents the initiatives for goal modification, growth and adaptation. Organizations may be lazy (Weick, 1969), conservative (Miller, 1978) and repetitive (Katz & Kahn, 1978), but in their changing mix, and in their competition for advantage, constituents may be active, radical and innovative.

#### Research Issues

The framework described does not specify a roster of major, or critical, criteria of organizational effectiveness. Their identification in a particular case or class of cases becomes itself a research issue. The model does suggest the criteria to be used in assigning relative importance among different indicators. These criteria are of several different kinds. For example, the value priorities of powerful constituencies for some purposes would take precedence over those of weak constituencies. Further, consensus among constituencies about a given indicator, or the prevalence of concern about a given indicator, adds weight. The requirement of balance among the three domains imposes the criterion that not all "major" indicators can be from the same domain.

However, the notion that some indicators are inherently or generally more critical than others is at odds with the nature of the model which asserts, instead, the importance of simultaneous consideration for a diverse and numerous array of indicators, and their treatment as an intact set. Thus, the model has no particular implications with respect to the validity of contemporary folklore about key variables indicative of effectiveness. The central message of the model is that all such bits of wisdom, experience or theory are constrained by assumptions (often unimagined as well as unstated) concerning the rest of organizational characteristics. The model emphasizes the frailty of propositions that start with "Ceteris paribus..."

The efficacy of any approach to the assessment of organizational effectiveness should be subject to test in comparison with alternative approaches. These approaches have unlike aims and different constraints in their use and, therefore, are in substantial degree incomparable except under specified conditions. The approach advanced in this chapter would surely fare badly in comparisons based upon parsimony, or upon short-term outcome predictions or upon simple linear predictive models. It will fare much better in comparisons based upon long-term outcome predictions or on diagnostic power in the early detection and correction of conditions that threaten organizational survival.

The application of this approach in research will require significant departures from prevailing practices. A later chapter reviewing published empirical research studies employing measures intended to represent organizational effectiveness shows that, with very few exceptions, the indicators used were few in number, exclusively drawn from the goal attainment domain, bound to a very short time span of reference and value oriented solely to management interests. The approach here described demands multiple and diverse indicators, measurement at the levels of persons and sub-units as well as for the organization as an intact system, sampling of

indicators from three domains, longitudinal or periodic measurement over a span of time, identification and characterization of significant constituencies, and the employment of non-linear predictive and analytical systems. There is a formidable array of developmental tasks yet to be done.

#### Practical Issues

The concept of organizational effectiveness is plainly alive and well outside of the scholarly conference halls and seminar rooms. People who must act in relation to organizations will make such judgements. Even if all such judgements by constituents were "wrong" or inexact, we would still be compelled as scientists to try to understand the formation of evaluative judgments and their implications for buying, selling, quitting, getting sick, compromising, organizing. . . .and all the other things that people do in organizational contexts. We need to do something better than dismiss the concept as a pathological fantasy or to claim it as a prerogative of some particular class of participants in organizational activity.

The approach described in this chapter is essentially descriptive, but it allows and guides the testing of causal and relational propositions of the kinds that key actors, such as managers, must use in their practical decisions. As it stands, the model is prescriptive only at a broad level of generality and abstraction. For example, the decision processes of an organization "...should fit the case"; a manager should not rely exclusively upon indicators of goal attainment; a manager should monitor with care and dependable information the systemic integrity of his organization. These are valid prescriptions, but they are also platitudes of little concrete help to a worried manager.

To move from platitudes to the specificity of diagnoses and predictions requires the use of a battery of measurement procedures and instruments selected to represent the three domains, and to employ in each domain a nested set of variables such that gross measures would serve to "locate" possible problems and finer-grained measures would help to explicate the problems.

This approach is already standard procedure in many organizations with respect to the domain of goal attainment. A manager of a factory, for example, is likely to have an information system that routinely delivers current and trend data for a small roster of variables that he considers to be of most importance. He is likely to have back-up data that can be employed for finer-grained diagnoses--perhaps to find out the causes for inventory build-up, or the sources of rising customer complaints. In this domain he is equipped with an array of causal propositions (theories?) and empirical analytic strategies that he uses with some confidence in taking corrective or preventive actions.

Few organizations, on the other hand, have similarly effective means for monitoring their effectiveness in the domains of systemic integrity and decision processes. Few track their key constituencies as well as they could and should. There exist means for doing so, although the technologies are still rudimentary and the associated empirical generalizations and theories need further development.

The approach described imposes some excruciating dilemmas upon managers, as well as other constituencies. These are implicit in such terms as "balance" among domains, "sufficient" to sustain an organizational system, and the like. Such terms correctly assert that the maintenance of organizational effectiveness over a span of time involves actions to "improve" one or another aspect of organizational functioning, but always at some cost and risk in other aspects. An exception would be an instance in which the point of action concerns some variable that is below that level necessary to sustain the others; in such a case, the negative side effects or foregone alternative actions count for little. The benefits from an approach to assessing organizational effectiveness in the manner described lie in the potential for early warning of trouble and, therefore, the possibility for low-cost incremental accommodations to the condition of risk.

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## II. ISSUES IN VALIDATING AN INTEGRATED MODEL

Cortlandt Cammann

The preceding chapter summarizes some characteristics of three leading contemporary models of organizational effectiveness, certain of their contrasting features, and a proposed integration of the three. In this chapter the aim is to extend the analysis of such an integration by suggesting, in further detail, some features of such an integrated model, some assumptions and theoretical propositions that can facilitate an integration, and the procedures and problems in validating an integrated model.

The idea of achieving such an integration is hardly a novel one. People who manage organizations, invest in them, or join and work in them, tend to adopt a holistic view, attending to any and all features of the organization which help them reach an estimate of its net "goodness" or "badness". More discriminating analysts (e.g. Pennings & Goodman, 1977) strain, as we do, to construct a framework which allows the joint treatment of distinctive-ly unlike factors which may be regarded as components of effectiveness. Some, in frustration, conclude that the concept of effectiveness is best treated not in general or inclusive terms, but in limited terms specific to the analytical or action context. A few, Hannan & Freeman (1977) among them, suggest that the idea organizational effectiveness might well be abandoned as a scientific construct, reserving it for use only in the context of social action in which the standard of judgement is not that of proof but that of best choice among alternative actions.

Such a range of views obscures the dual role of the concept: first, as a summative or diagnostic estimate made to guide social judgements and action choices, and, second, as a concept usable in developing theoretical systems and in hypothesis-testing operations. To serve best in the latter role, a construct should be defined parsimoniously, and should be susceptible to operational representation in a single standard way or ways known to be conceptually equivalent. To serve the former role, the construct should be defined as inclusively as possible, and should allow operational representation in a variety of ways that, in sum, are conceptually equivalent even though the component parts may be discrete and unlike.

Underlying this dilemma are two unlike views of the nature of organizational science. If the purpose is to allow discovery and accurate representation of the ways in which organizations function, then there is advantage in avoiding the value oriented question of the meanings--note the plural--of organizational effectiveness. If the purpose of organizational science, as Simon (1969) and others have argued, is to help guide the design of organizations to achieve particular purposes or functions, then the question of the multiple meanings of effectiveness can not be ignored.

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Further, it must be noted that "organizational science" is a multi-level discipline in the sense that it must deal with a multi-level set of nested organizational entities. For studies of the internal dynamics of an organization, for example, narrowly defined conceptions of effectiveness might well serve, but for studies of relationships among organizations, or of organization-environment relationships, broader conceptions are required.

The orientation of this report is toward the view that both organizational science and social action will be best served in there can be developed an integrated conception of the meaning of organizational effectiveness which preserves the possibility of dealing with conceptions of more narrow reference but invites and aids a more inclusive treatment. The gain, in the latter case, will be to inform the interpretations that are made in inquiries that choose, for reasons of exactness or feasibility, to address problems of lesser scope.

The remainder of this chapter will outline some of the requirements of an integrated model and the general characteristics of a framework that could serve the aim of integration. Following this are discussed some issues of assumption and procedure that bear upon the validation of an integrated model.

#### USES OF AN INTEGRATED MODEL

The view that the three different approaches are susceptible to integration stems from the observation that each attempts to describe and evaluate the stream of events which occur within and around an organization. They all address the same complex set of phenomena. The goal oriented models isolate the characteristics of the stream of events which relate to the ability of the organization to meet the short-run needs and expectations of the constituents, both within and outside of the organization. The natural system model examines those aspects of the stream of events which relate to the organization's ability to function and continue functioning as an open system. The decision process model isolates the dimensions of the stream of events which describe the capacity of the system to make decisions toward the solution of strategic and operational problems. Thus, each of these perspectives on effectiveness is isolating a different aspect of organizational functioning but the same stream of events is common to them all.

A major requirement of an integrated theory is that the component models must, in principle, produce similar evaluations of the effectiveness of an organization. If the component models lead to contradictory conclusions, the possibility of their integration would seem to be precluded. While there are some differences in the sampling of events and the time perspectives involved, there should be a basic congruence over a number of tests in the conclusions that are drawn about the effectiveness of the organization by inference from the same stream of events. The task of developing an integrated theory, therefore, is that of developing models, using each of the different perspectives, which are assumed to be basically compatible with each other. Practically speaking, there are a number of advantages to this type of an integrated model.

The first advantage involves the long term development of a theory of effectiveness. By its nature, the concept of effectiveness involves value positions which can never be proven true or false. They represent methods

for distinguishing among organizations that are only valid to the extent that people agree on the underlying values which are used. It follows that there can be no ultimate external test of the validity of an effectiveness theory. Developing an integrated theory, however, does have the advantage of allowing tests of internal validity. It is possible to evaluate the adequacy of the overall theory by testing the congruence of the results from application of each of the three component models. If, in any assessment, discrepancies are found between the conclusions from the different approaches, assessors know that they must collect additional information or reassess their information to discover why the discrepancy occurs. If the results reflect irreconcilable differences in the conclusions indicated by the models then the assessors must suspect that the component models are not congruent and that their interpretation is not feasible unless one or more of the models is changed. Over time, testing effectiveness models against each other should produce an integrated theory that, at a minimum, is internally valid.

A second advantage to developing an integrated approach arises as a result of the variations in conditions which exist in organizational settings. Resource constraints and existing organizational practices frequently make evaluation of effectiveness difficult. In any given situation the use of one or another of the three approaches may not be feasible. If there are available three alternative approaches which over time produce congruent results, then a choice among models can be made on grounds of convenience, time, cost or feasibility.

An example may be useful. In some organizational settings it may be important to evaluate the effectiveness of the organization in making strategic choices about the mix of outputs to be produced and which constituencies are to be served. Since it is a character of strategic choices that their consequences may not be known for many years, it may not be feasible to evaluate the organization's strategic effectiveness using either a goal model or a natural system model. While one cannot confidently assess the quality of the strategies themselves within reasonable time frames, it is possible to evaluate the adequacy of the decision processes which are involved.

A third advantage to an integrated approach involves the relationship between effectiveness theory and action. A prevalent purpose in assessing organizational effectiveness is to identify sources of potential ineffectiveness that can be removed or moderated. Each of the three approaches highlights a different aspect of organizational functioning. Each will highlight different aspects of a given organizational problem. While each of the three approaches are likely to provide some insight into the nature of the problems which exist, one or another will point more certainly to actionable plans and solutions. Having alternative models increases the possibility that an assessment will help organization members discover points of action they can use to increase organizational effectiveness.

#### SOME ATTRIBUTES OF AN INTEGRATED MODEL

A successful integration of the goal, natural system, and derision process models of organizational effectiveness would have three key attributes: (1) Component models would be based upon a common image--a theory,

or set of assumptions and propositions--about the nature of organizations; (2) A distinctively different substantive focus would exist for each of the component models; and (3) A valid theory would be available, for each of the component models, capable of organizing and directing the choice of variables and measurement methods within each model. In the absence of some overall common image of the nature of organizations the possibilities for integration become small. The component models must be sufficiently different in content and time orientation to warrant differential treatment. The three components must each be capable of independent application in analysis, with the implication that each should comprise an intact theoretical organization of its own and one that allows but does not require reference to the other models. In short, the integrated model would have components that draw substantially upon different kinds and sources of information, that are sufficiently independent from one another to allow internal assessment of their congruence, and which do not rest upon incompatible basic assumptions about the nature of organizations.

#### Organizational Assumptions

In the approach to an integrated model contained in this report, certain basic assumptions are made about the nature of organizations. These assumptions are numerous but, for the most part, familiar to those likely to read this report. Some were mentioned in the preceding chapter. We single out for special emphasis four that underlie all that follows. These pertain to the concepts of organizational purpose, organizational problems, the initiatives for organizational change, and the sources of criteria for valuing organizations.

1. Purposiveness. In our view, organizations are emergent or contrived entities which arise from and are maintained by the activities of people and embody the purposes of those people. People have goals but organizations do not. People have motivations to act, but organizations do not. The organization becomes a medium through which individual motivations and goal oriented behaviors are expressed. This assumption implies that references to organizational goals or purposes are analogies, meaning only that organizations function as if they had goals or, at most, that significant and influential members have some degree of consensus about their goals. Consensus is a prevalent condition, as people tend to join in, remain in, influence, and become socialized in ways that induce a workable degree of consensus. Thus, one notes the readiness of members or observers to attributes purposiveness to the organization itself. Such goals are multiple, and subject to change in their mix and priorities.
2. Organizational problems. All organizations have "problems" requiring "solutions" and they are never problem-free. The distinctive characteristic of "organizations" is their adaptive, problem solving capability applied to their production function, their self-maintenance requirements, and to the adaptation to a specific environment of opportunity, risk, and cost. It is useful to distinguish between those types of problems that are generic to organizational systems--i.e. problems that are sustained or recurrent in

all organizational systems and which must be managed sufficiently well to assure continuity of essential capabilities of the organization--and those problems that are unique, selective or episodic and arise from external sources rather than from the nature of the organizational system itself. Many organizational problems are internally generated in the sense that the solution of one problem will create others, or a mode of solution is such that it is temporary and allows recurrence of the original problem. For these reasons, it is useful to regard organizations as problem-solving systems.

3. Organization of constituencies. While constituents are persons, each with some uniqueness of interest in the focal organization and of direct engagement in the activities of the organization, they usefully can be treated as populations, as coalitions, and as organizational entities. Members of an organization are involved in different exposure to information about the organization. They form constituency populations to the extent that a number of them will share like information and like value perspectives, and thus tend to interact with the organization in like ways; such population constituencies can be empirically discovered and defined, and can be treated in analysis with reference to their differences from other populations. Interacting organizational members tend to form coalitions for joint action; these coalitions may form and reform fluidly in different contexts of action, but tend to become relatively stable as to membership and shared value perspectives; an individual may belong to more than one such coalition. Constituents of like organizational function or role may become "organized" in the sense of generating an internal system for information usage, decision making and action through legitimization of representatives or spokesmen. The same distinctions among constituent populations, coalitions and organizations apply equally to external or non-member constituents. The distinction between "member" and "non member", however arbitrary, is usefully retained as it aids in the analysis of constituency formation and action.
4. Initiative for change. Organizations have tendencies toward homeostasis, i.e. continuity, stability and non-change, and will persist in a stable state if the environment allows and if entropy is forestalled. The initiatives for change in organizational structure, in activity patterns, and in apparent purpose, arise from the actions of constituents or of representatives of coalitions and organized constituencies. These initiators may be members or non members.

#### Substantive Content

For an integrated model of organizational effectiveness to be maximally useful, the three component models should be distinctively different from one another in their informational content. This requirement stems from the assumptions (1) That each of the component models is attuned to a different facet or aspect of organizational functioning; (2) That complementarity of component models rests upon their non-identity; and (3) That a characteristic feature of any useful model is the exclusion of information of marginal utility

in the interest of focus upon core features of the model. The three component models treated in this report--the goal model, the natural system model and the decision process model--each has a distinctive substantive focus, described elsewhere, but each includes some marginal reference to information that is central to one or the other of the three models. For example, the natural system model treats resource acquisition as a factor in its structure, but resource acquisition and the allocation of resources are central to the input-throughput-output formulation that is implicit in the goal model. Similarly, the decision process model contains reference to the action goals of the organization and to information about their nature, but the focus is upon the appropriateness of these goals rather than upon the organization's success in their attainment.

#### Valid Theories Within the Component Models

This requirement for a successful integration of the three component models of organizational effectiveness is partially met, in our view, at the present time. In each of the three models there exist a rich array of theories that are partially validated and sufficiently well developed to allow serious consideration of their merger. Also, each has a rich diversity of component theories of lesser scope that show promise of linkage and of support for the emergence of overarching theories. The attempt to formulate an integrated model that embraces the three component models can thus be seen as analogous to the integrative efforts that have long been pursued within each of the subsidiary domains. The following remarks illustrate this point of reference to the goal model, the natural system model and the decision process model.

1. The goal model. The theories within this domain share the core assumption that any organization will have multiple identifiable goals, including optimal states, that are organized in some hierarchical scheme as to priority and interdependence, and which allow measurement or estimation of the extent to which they are approached, achieved or maintained. It is further assumed that the core work activities and their associated technologies, as well as the support activities, can be assessed with reference to their contribution to the attainment of such goals. The conceptual simplicity and elegance of this image of effectiveness and its assessment conceals a great deal of complexity as to subsidiary theories and operational practice. Whose goals are to have priority? How can constraints be satisfied, and what are the standards for judging goal attainment? How are appropriate technologies to be judged, when choices exist? What time span shall be used for evaluating effectiveness? Given the uniqueness of an organization's goals and goal sets, how can organizations be compared as to their relative effectiveness? Each of these illustrative questions, has been the focus for theoretical development and validation. An example is the treatment by Siegel (1980) of the meaning of "productivity" and the choice among alternative valid ways to represent the input-output ratio of a particular organization. In principle, although not yet in practice, all subsidiary theories in the goal model domain can be integrated within the framework of the shared basic assumptions and propositions.

2. The natural system model similarly is represented by a core set of assumptions and propositions that are common to a variety of subsidiary theories of lesser scope, all oriented toward the definition of the nature of systemic survival requirements ("generic system problems" which must be "managed" or "solved"), and toward the explanation of their interdependencies and their means for solution. In principle, these overlapping and somewhat conflicting formulations lend themselves to integration by reference to their shared ultimate criterion of organizational survival and by some convergence, already evident, in the validation of microtheories within the model. Many issues remain unresolved, but they appear to be tractable.
3. The decision process model appears at this time to be the one least well developed in both theory and in practice, and the one most problematic as to ultimate unification. The basic integrative argument is that it is possible to develop models of optimum decision making processes that should apply to a broad range of problem types, and that their application will result in optimized decisions. Therein lies the rub, for the outcomes may be distant in time, they may be confounded by seemingly random environmental events and changes, while the informational base for decisions must remain historical or contemporary. For these reasons, we think that the process view of problem solving will prevail over outcome orientations in the emergence of an integrated theory of organizational decision making. The leading contemporary developments in theory support this view. The leading developments in practice (roughly encompassed by the domain of operations research) do generally employ outcome criteria, but are also limited to relatively constrained "problems" and to relatively short time frames.

#### Stages in Development and Validation

Developing an integrated, inclusive theory of organizational effectiveness involves three phases of work which can be pursued concurrently. First, more specific models must be developed for assessing effectiveness from each of the three different perspectives. Second, each of these models needs to be operationalized and tested independently of one another to determine their utility and their internal validity. Based on these empirical tests, the component models may have to be revised to improve their operational utility and their conceptual clarity, and the revised models will also have to be examined empirically. This phase of development will continue until three adequate models are available; their elaboration and further improvement is a task without end.

The third phase involves examining the congruence among the three models by using them together to assess the effectiveness of target organizational systems. If the models produce congruent results, then the integrated theory will be ready for use. If they produce incompatible assessments, the reasons for discrepancy will have to be explored, and the models will need to be revised and tested until congruent and internally valid models are achieved.

In this report, we are concerned with the first two phases, i.e. developing the three separate models and assessing their compatibility. We will attempt to use conceptual approaches and methods that have potential for congruent results.

#### ISSUES IN VALIDATING AN INTEGRATED MODEL

A number of difficulties will arise in the validation and application of a model of organizational effectiveness which joins three unlike component models. These issues are, in part, intrinsic to the character of the integrated model which we have outlined and in part issues that arise from operational tasks and from practical constraints. A central aim is to validate the integrated model in the sense of determining the degree and nature of the congruence among the three components. A related aim is to validate the integrated model in the sense of assessing the gain in useful information that arises from the use of all three components rather than any one of them. These aims have some appearance of being contradictory, as one rests upon the conceptual identity of the three components while the other rests upon their non-identity. Ideally, the components will be congruent with reference to longer-term organizational outcomes such as survival and adaptability while at the same time being partially incongruent--i.e. complementary--at any given time. In the following pages we take up three problems: (1) The non-independence of the three component models; (2) The sources of discrepancy among them; and (3) The practical issues of getting the required information.

##### Non-Independence of Component Models

A model assessing the ability of an organization to meet the short-run output goals of managers may well involve collecting information about the organization's ability to coordinate the activities of its members, since such an instrumental goal is likely to be an important one in the goal model. It seems likely that application of the systemic integrity model would also include measures of the ability of the organization to coordinate the activities of its members since this is a key systems problem which must be managed well if the organization is to function effectively. This creates a situation in which the information collected to assess the goal model and the information to assess the systems model might be the same.

The result of this partial dependence upon common data is likely to be that there would be some difficulties in determining the true extent of congruence among different models; some statistical congruence will be artificial. Of course, this problem is not totally negative. Each of the three models is viewing the same concurrent stream of events to draw conclusions about the present and future effectiveness of the organization, so it is not surprising if there should be some overlap in the information that they employ. In our view, the fact that similar information is used in the assessment of effectiveness from different perspectives is not a significant conceptual difficulty if the different component models use the information in different ways. To continue the coordination example, one can observe that in the goal model, a measure of coordination aids assessment of the current throughput capacity or efficiency of the organization, while in the natural systems model the same measure is interpreted in the context of systemic maintenance.

As long as the salience of the information in determining the effectiveness judgements varies from model to model, the fact that there is a common information base should not invalidate the idea of using the three model approach. The potential interdependence among the models does mean, however, that researchers who are developing the component models need to be very careful not to build in analytic strategies that produce a tautological conclusion that the compared models are congruent, when in fact they merely have used the same information in the same way.

#### Valid Discrepancies Among Models

Because of certain intrinsic characteristics of the three component models of organizational effectiveness, it is to be expected that in any given application some discrepancies will be found which are "valid", in the sense of being an accurate representation of the organization, but which do not imply incongruence or incompatibility among the models. There are at least three reasons why such discrepancies may arise.

The first arises from the existence of a degree of unpredictability surrounding organizational events, i.e. actions and consequences of actions which can only be treated as though they are random. For example, it is quite possible, and indeed it happens, that an organization engaged in problem solving may choose by inadvertance or sheer luck that course of action which turns out to be optimal. A deficient approach to information management and decision making may produce a good result, with the risk that an analyst may attribute the outcome to a presumed effectiveness in decision making processes. A set of outcomes taken from the goal attainment model may suggest high organizational effectiveness while an analysis of the decision processes may indicate gross deficiencies. One supposes that over an extended period of time an organization's events, or runs of good luck or of bad luck, will average out to a state of congruence between the goal attainment and decision process models but at any given time they may well be discrepant.

A second source of transient discrepancy among effectiveness models can arise from changes in an organization's external environment. An organization could be solving problems very effectively and executing an organizational strategy which, given all that is known at the time, is reasonable and likely to produce positive results. If there is, then, a change in the organization's external environment that alters the resources, or the technologies they are using, or the societal interest in the outputs they are producing, the organization might become ineffective according to many measures. Thus, external changes which may be outside of the organization's control and knowledge could have the effect of producing outcome effectiveness measures which look very poor even though assessments of the organization's internal processes indicate that it is very effective. The discrepancy would not indicate that the models themselves are incongruent but rather that there are external factors operating which were not and could not have been taken into account.

A third source of observed discrepancies among the effectiveness models lies in their differences in behavioral focus and implicit time frames. At any given point in time organizations are likely to be changing, i.e. becoming more or less effective, and likely to be more or less effective in different areas. As a result, models which tend to focus on different time frames and

in different activity domains are likely to produce different results. This type of discrepancy, again, does not imply that the models themselves are incongruent but rather that they are tapping different aspects of the organization's overall effectiveness. As in the previous two cases, discrepancies of this type would not necessarily indicate that the models have to be changed or judged incongruent but rather show the value of using different approaches in attempting to come to some overall assessment.

#### Pervasiveness of Time Frame Issues

The issues raised in the preceding pages emphasize the importance of the time frame to be employed in examining organizational effectiveness. A dilemma is created by the possibility of valid but transient differences among the effectiveness models in their indications of organizational effectiveness. It becomes difficult in the short run to test whether any differences that are observed mean that the models are incongruent. Such a dilemma can only be resolved through a long term program of research in which discrepancies are explored in detail as to possible causation when they occur, and conclusions about the congruence of the different effectiveness models are based upon (1) Numerous concurrent studies designed to randomize the effects of chance and environmental disturbance; and (2) Studies of sufficient time duration to allow the "true" congruence among models to be displayed.

Except for certain limited research purposes, virtually all uses of estimates of organizational effectiveness have a forward orientation. This is true even when the effectiveness indicators employed are themselves historical, but used for forward extrapolation. The future is always, to some degree, unpredictable, and all models for estimating effectiveness share the time-frame problem. These issues are amplified, and deliberately addressed, in this effort to develop an integrated model, but are not unique to it. For example, if an effectiveness model focused in part on assessing the quality of an organization's long term strategy for coping with its external environment, effectiveness judgements made now can not be fully validated until a long time in the future. This has obvious problems when it comes to determining whether the strategies which the organization is using are good ones or not. Furthermore, it is possible that an organization is choosing an effective strategy which may become invalidated due to external events over which it had no control and which it had no means to anticipate. Assessors face the dilemma of deciding whether or not such an outcome is an indication of ineffectiveness or not.

Further, long term and short term effectiveness may involve quite different dynamics and may be negatively related to each other at a given time. A number of theorists have observed that what is effective in terms of achieving goals in the short run may come at the expense of being able to achieve goals in the long run. Any effectiveness model must somehow deal with the dilemma which is created by the difference between long and short term effectiveness and must incorporate some method of resolution.

#### Availability of Adequate Data

In addition to the theoretical and interpretational problems which must be resolved, there are a variety of practical problems in validating and

implementing an enlarged model of organizational effectiveness. A key problem is that in any given situation assessors are likely to have limited ability to get the required information. Limitations come from resource constraints and time constraints as well as from the difficulty of making satisfactory translation from conceptual variables to measurement operations.

Most people who have tried to employ a new, or perhaps merely an unaccustomed, model of effectiveness assessment in an organization are struck by the absence of information or the inappropriateness of the data available from the organization's existing information systems. Since these systems are expensive, and there are limits to their adaptability, there normally arises a very serious problem of modifying the information content and information sources to the extent required. There are strategic issues (e.g. whether to employ special one-time measurement procedures, or instead a permanent modification of the information systems); there are conceptual issues (e.g. what assessment measures can be omitted with least risk to the organization and to assessment enterprise?); and there are issues concerning unwanted and unintended disturbance of established work roles and work relationships. The established information sources are likely to be designed around the goal model of organizational effectiveness and short-term criteria, to the virtual exclusion of information relevant to the natural system model or decision process model.

A second practical problem arises from the importance, in the integrated model here proposed, of constituencies as the source of crucial data concerning the environment of the organization and concerning the values that will be invoked in judgements of organizational effectiveness. While some organizations have developed ready means for getting information from and about certain of their constituencies, most have no easy means for doing so. Some firms, for example, conduct periodic questionnaire or interview surveys among identified employee groups, but most do not; some have elaborate systems of inquiry among clients or customers, but most do not; some keep rather good records of management decision issues and processes, but most do not. Few organizations have explicitly identified their various significant constituencies or assembled information about their characteristics. To get appropriate information from constituencies requires, in most organizations, forms of inquiry that lack precedent.

A final practical problem that must be dealt with, initially by researchers but ultimately by managers, arises because the conceptual base for information collection in most organizations is unique and local, thus not specifically suited for comparisons over time or comparisons among organizations. To give a trivial, although bothersome, example there do not exist standard methods for recording absences from work or reasons for termination of employment; minimum legal, contractual and payroll requirements are met, but without regard for the interpretational value of information on these matters as to assessing organizational effectiveness. "Profit" is a non-trivial example, as well, for the conceptual basis for estimating profit, not to mention the operational expression of the concept, varies not only among firms but may vary in a given firm across years.

The foregoing practical problems of data acquisition and use are serious enough to warrant mention as a factor in the process of validating and making operational an improved model of organizational effectiveness. They do not, however, appear to be insuperable or to prohibit effective work.

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### III. A MATRIX APPROACH TO CONSTITUENCIES AND SYSTEM PROBLEMS IN ORGANIZATIONAL EFFECTIVENESS

Mark Fichman

A great deal of energy and attention has been given to identifying the dimensions and dynamics of effectiveness. Many of the problems encountered have arisen from subjecting various proposals to both a value-oriented critique and a systems-oriented critique. The value oriented approach has forcefully argued that any conception of effectiveness must acknowledge the value premises underlying it. If effectiveness is conceived, for example, in terms of the aggregate satisfaction of organization participants, then the proponents of this view ought to be aware of the implicit social welfare values they are supporting. If these social welfare assumptions are not understood and accepted by others, or in fact rejected, then there is little ground for general acceptance of aggregate satisfaction as an effectiveness criterion. Under a different set of value premises, an equally coherent statement of effectiveness criteria could be developed without any consideration of satisfaction.

In this chapter we propose the beginning of a potentially useful and elegant solution to the differences in value orientations as they influence the evaluation of effectiveness. The concept of multiple constituencies with different levels and types of relations to each other and to the focal organization may allow us clearly to identify and consider different value orientations in the sphere of effectiveness. Constituencies may be thought of as distinct groups which have different concepts of what is an effective organization. By relating these differences in effectiveness concepts to differences in values and interests, we can understand the bases for different effectiveness criteria held by different constituencies. Furthermore, we can move away from the troublesome idea that a single set of effectiveness criteria should be sufficient to characterize an organization.

The response of an advocate of a systems perspective to various proposals concerning effectiveness criteria and models is also difficult to handle. Systems theory proponents describe organizations as complexes of variables which are multiply determined, and which often show reciprocal causal relations to each other. Such a description rarely yields simple unequivocal models of effectiveness, in which a single variable or a linear combination of variables predicts effectiveness. On the other side of the equation, survival can be viewed as an appropriate criterion. Within a single organization, or in comparisons among organizations, one may want to make a judgement of relative effectiveness prior to the organization's demise. If one takes a step back and views effectiveness as the probability of, or capacity for, survival, one needs to identify indicators of system survival. Indicators would presumably be drawn from a systems model of

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essential organizational functions. At this point, the difficulty is in identifying those aspects of an organizational system most critical for survival. Since those aspects are embedded in the complex of multiple and reciprocal causation referred to above, any particular choice will be potentially controversial or arbitrary.

The general form of the argument drawn from the systems viewpoint is that x (a state, process or function) is a necessary but not sufficient condition for effectiveness, e.g. efficiency is a necessary but not sufficient condition for survival. While the research implications of this orientation seem to point to an epidemiological mortality study of incredible proportions, we can still draw some practical research ideas from the system perspective. We can try to take account of the hypothesis that individual and aggregate behavior in organizations is, in part, a response to system properties. If we ask whether behavior is responsive to and appropriate to the demands of the system, some insight may be gained into what constitutes effectiveness for that particular system.

For various constituencies applying their respective value orientations, survival is undifferentiated and does not show satisfactory discriminability. Constituents would be expected to make more finely tuned judgements of organization effectiveness than survival vs. extinction. These judgements of effectiveness are probably derived from a complex set of considerations involving (1) the costs and benefits to the constituency of remaining involved with the focal organization and (2) the other options, with their attendant costs and benefits, available to the constituency. This judgement process may be analogous to some of the cognitive models of turnover which have been proposed in recent years. (Mobley, 1977; March & Simon, 1958)

One approach to addressing this issue, alluded to above, is to make a set of assumptions concerning the impact of system properties on the types of problems an organizational system faces. A starting point is a set of system properties which inhere in any organization. On to this set of system properties, a set of problems would be mapped. If the taxonomy of system properties is accurate and exhaustive (strong assumptions), and the mapping process is correct, then the set of problems would provide a reasonable starting point for the development of a generic problem set applicable to any organizational system.

If it were the case that organizations have generic sets of problems directly arising from their operation as systems, then we might have a method of identifying the dimensions along which organizations as systems vary in their effectiveness as systems. It should be kept in mind that the individual elements of this set of problems are each necessary but not sufficient conditions for effectiveness.

These problems would be the objects of the problem solving processes in the organization. Without getting into the murky waters of problem structure and problem decomposition (i.e., the problem solving process), we would like to be able to relate problems identified by the organization to the generic problem set. An organization, within its own culture, shared perceptual framework, and language, should be capable, possibly with some outside help,

of identifying its problems. These problems will be framed and articulated in terms best understood by organizational members. The task of an outside observer, such as a researcher or consultant, would be to take the organization members' characterization of problems and translate them into a problem set which is identical to or similar to the generic problem set. The trained observer, using the tools of his/her trade (e.g. measurement techniques, theory), should be able to relate the organization members' rendition of their problems to the generic problem set. If this approach is viable, organizational activities and purposive behaviors should then be classifiable into categories which may be explained and understood in terms of the generic problem set.

Within this framework, one could ask whether the problem solutions are in fact allowing the system to maintain itself (the potential for survival question) and, at a second stage, whether the solutions proposed are satisfactory to constituents (the value question). The problem solving process takes on a special role here, that of mediator between and perceptual filter for system demands (the expression of system properties as problems) and constituent demands. One can think of the degree of success of the problem solving process, as it relates to the generic set of problems, as a leading indicator of organizational effectiveness, though it is not a reflection of the effectiveness constructs being employed.

The minimum condition for organizational effectiveness is the continuing solution of generic systems-based problems. This would constitute an adequate necessary and sufficient internal definition of organizational effectiveness for the system as a system. That is, before asking whether the problem solutions have been satisfactory to constituencies, or for a particular constituency, we must first ask how well the problems have been solved in system terms. In effect, we are formally accepting the concept of system survival or the capacity for survival as a partial definition of organizational effectiveness. It must be borne in mind that even if an organization is effective in the 'system as system' sense, it may be ineffective from the point of view of some or all of the participating constituencies.

The satisfaction of system demands may not fit with the demands of internal and external constituencies. The satisfaction of these constituent demands is the second stage in the analysis of organizational effectiveness. As noted above, simply assessing system effectiveness without regard for constituent interests is a sterile approach without much useful meaning. The effectiveness of the organization's problem solving for constituents completes the appraisal of effectiveness. It seems obvious that if no constituency was satisfied with problem solutions, it would require some mental gymnastics to rate that organization as effective. Returning to the first stage, system qua system problem solving, one can not consider system operations apart from constituencies. The demands and actions of constituencies will have ramifications for the operation of the system. For example, the withdrawal of constituent support in response to unsatisfactory problem solutions may be reflected in a loss of resource acquisition capacity or a change in the amount of output absorbed by the environment.

Hence, one is drawn to proposing an integrated analysis where one looks at problems as ramifications of constituent values and systems properties. An integrated analysis would have the following stages.

- (1) A system, due to the nature of systems and their properties, will present a set of generic problems directly arising from system functions. For example, the need for inputs presents a resource acquisition problem. The property of differentiation creates a coordination problem. The property of negative entropy requires the binding of energy, which may be thought of as the problem of efficiency. These are rough examples of how one might attempt to map a set of problems onto the set of system properties. These problems would be the rows of an effectiveness matrix where the columns would be constituencies.
- (2) The system would interact with a set of constituencies existing formally within, across, and outside the system boundary. The managerial and production/technical subsystems would be examples of constituencies formally within the organizational boundaries. An adaptive subsystem might be thought of as a constituency spanning the boundary, while the vendors to and buyers from the system would be constituencies outside the formal organization system.

With these two sets we can create a constituency-by-problem matrix, with 0 entries denoting no problem for the constituency and 1 denoting a problem for the constituency.

Effectiveness would then be thought of as a multidimensional concept in two senses. First, system effectiveness would be defined as the degree to which the generic problem set is being solved (managed may be a better word) satisfactorily across time. System effectiveness for a particular constituency would be represented in the column of a particular constituency, asking whether that problem subset is being managed satisfactorily for that particular constituency.

Let us look at this matrix a little further and see what types of information can be drawn from it. Suppose we ask for two additional items of data for each cell in the matrix. We can look at the intensity of the problem, asking how salient that particular problem is for the system. For certain organizations, some problems may not require attention and may be accounted for well. Other problems may be more pressing, difficult and demanding of attention. This variation of intensity may be dynamic across time, and may even be characterized by certain patterns of problem intensity. For example, problems in production, the throughput process, may cause difficulties in the control of input and output inventories. This scenario seems more plausible than one in which a production problem occurs which has little impact on input and output inventory control.

A contrasting case would be one where the throughput process is operating well, creating problems in profit retention and reinvestment (a manifestation of the property of negative entropy) and management of growth and coordination in the organization. For example, consider the current crop of cash rich firms engaged in mergers and acquisitions as a response to their inability to reinvest profits internally. These problems of growth management are a product of the system properties of dynamic homeostasis and differentiation. Organizational systems successfully processing throughput efficiently will show growth as a function of the property of dynamic homeostasis ("The steady state which at the simple level is one of homeostasis over time, at more complex levels becomes one of preserving the character of the system through growth and expansion.", Katz & Kahn, 1966, p.24.) This growth leads to increased complexity and differentiation of the system, which in turn presages new problems of coordination. By measuring intensity, we can obtain some idea of the relationships amongst problems as they vary in the organizational system.

A second set of data that would be of value is the preference ordering held by each constituent group for the problems of concern to them. Presumably, constituents would differ as to which problems they would like organization actors and groups to address. One could look at the agreement amongst constituent preferences for indicators of cooperation, conflict, coalition formation, and constituent withdrawal. These preferences may also provide evidence on how choices among problems are made.

The problem solving process can then be analyzed as an independent process applied to the generic problems. In this approach, problem solving is a method which acts on the problem in the context of the various constituencies and their preferences. In effect, problem solving can be thought of as a transformation matrix which operates on the problem matrix to create a new problem matrix. This notion is similar to Kelley and Thibaut's (1978) theory of interdependence in social interaction. The problem solving process considers the values or preferences of the various constituencies, and has an independent set of values vis a vis problem solving per se. This inherent set of values is oriented towards preferred methods of conflict resolution and management.

Two questions present themselves at this point. Are problems capable of being treated independently, i.e. without consideration of other problems in the matrix, and are problems amenable to solutions which can be evaluated?

#### Independence

From the constituent perspective, problems, or clusters of problems, may seem independent, and may be acted upon in that manner. From the vantage point of the system, this may not be the case, and certain linkages may be conceptually desirable, such as that of input to throughput to output. These linkages will probably vary as a function of the structure and technology and age of the system. The members of the organization may attempt to minimize linkages among problems, or create multidimensional problem clusters minimally linked to other problem sets. A research approach would prefer manageable clusters of relatively independent problem sets. In fact, this precondition (independent problem clusters) may affect the quality of problem solving by allowing for easier problem definition and comprehension.

### Evaluation

The perspective proposed here does not assume that problems will stay permanently solved. Systems evolve and change, yielding new manifestations of the generic problems, and problem solutions may reveal or generate new problems. Several tentative criteria for evaluation can be offered.

- (1) Has the intensity of the problem set addressed increased or decreased over time?
- (2) Has the intensity of the problem set increased or decreased over time for a given constituency?
- (3) Have the preference orderings of the various constituencies changed?
- (4) Have the preconditions for problem solution changed?
- (5) Has the profile of the problem set changed over time? That is, has there been a change in the patterns of problems for different constituencies or have problem patterns remained relatively stable?

The final part of this sketch of a systems based problem solving approach is a schematic example of the determinants of the problem by constituency matrix proposed. These are drawn from the Katz and Kahn (1966) treatment of system dynamics. Georgopoulos and Cooke (1979) have offered their own problem taxonomy based on systems theory premises which, while differing in substance from our proposal, shares the same spirit and purpose, and may prove useful in the analysis of organizational effectiveness.

From the system problems and constituencies, one can begin to construct the proposed matrix (see Tables 1 and 2). Although the mapping of problems is rough and is only intended to be suggestive, it is interesting to note in Table 1 that some problems can be mapped onto more than one of the system properties. This may be due to the ill-defined nature of the mapping and inadequacies in the concepts or nomenclature. It is tempting to suggest that this lack of clarity may account for some of the difficulties the field of organizational behavior has had with concepts such as "coordination" and "boundaries". The construction of this matrix may be a valuable exercise if only to reveal mapping difficulties and to facilitate the clarification of concepts. Some of the system problems may be manifestations of the interaction of several system properties. That is, a problem may not be attributable to one particular system property, but rather to several properties acting in concert.

In a more positive vein, these multiple occurrences of problems (for example, the pervasiveness of control problems) may hint at the definition of problem linkages and clusters. Problems can arise in orderly groupings where the existence of a problem may increase the likelihood of other problems occurring. The argument here is that the use of this matrix approach may shed light on those sets of problems which tend to covary.

Table 1  
System Properties and Their Corresponding System Problems

System Properties	Illustrative System Problem Areas
Import energy	Resource acquisition Personnel function Boundary management
Throughput	Appropriate technology Efficiency Quality control
Output	Inventory Control Boundary management Sales
Cycle of events	Role structure Coordination
Negative entropy	Profits Investment Efficiency
Information input, negative feedback and coding	Accounting Control
Steady state/dynamic homeostasis	Control System maintenance Management of change and growth
Differentiation	Coordination
Equifinality	Strategic decision-making Research and development Planning

Table 2

Constituencies		External
	Boundary spanning	
Internal		
Production/technical	Managerial	Vendors
Maintenance	Adaptive	Buyers
Supportive		Competitors
		Government
		Special interests

To show how such a matrix approach might work, let us consider a reduced problem-by-constituent matrix which might characterize an organization's input-throughput-output subsystem. (see Table 3)

This input-throughput-output matrix can be expanded by specifying generic problems and constituencies. We will limit the size and specificity of the matrix so as to facilitate this example. Table 4 is a somewhat specific elaboration of the input-throughput-output cycle in an organizational system as manifested in the problem-by-constituency format. We will first score it for each constituency in terms of the presence (1) or absence (0) of that problem for each constituency. For purposes of this example, let us imagine we are dealing with a production firm. In parentheses, we will score these entries for intensity; how important that problem is for that constituency on a scale of 1 to 10.

In the hypothetical matrix, the production group is wholly oriented towards the problems of throughput, without attention to the input and output problems. The supportive subsystem or constituency is oriented towards the maintenance of the throughput function, primarily concerning itself with maintaining the flow of goods and services without bottlenecks to and from the throughput function, i.e. the technical core, in Thompson's (1967) terms. This configuration of concerns in the internal constituencies is in line with that of the vendors and buyers, with conflict between them occurring in the relative importance attached to problems, not their presence or absence. One conflict is in the area of output where buyers are relatively more concerned with a smooth flow of products at a good price while the support system places greater priority on the control of inventories. On the input side, vendors and the support system are similarly concerned with a smooth adequate flow of resources. This schematic analysis would indicate relatively good agreement between the internal and external constituencies on problem priorities, and consequently, on the types of problem solutions which would enhance effectiveness for them.

The entries for boundary spanning systems reflect different conceptions of effectiveness and of the problem mix. The managerial constituency, while sharing some of the concerns of the external constituents and the internal constituencies, differs in its assignment of priorities with respect to the internal groups. It places a lower priority on the problems of the production system, and is more concerned on the input side with resource acquisition, and on the output side with sales, than is the supportive subsystem. Basically, the managerial subsystem has a wider range of problems which it uses to define effectiveness. The adaptive subsystem is isolated, placing higher priority on personnel acquisition and appropriate technology than any other constituency. In line with their interest in longer range planning, this constituency place their primary emphasis on acquiring the people and technology to best position the firm in the future marketplace. An alliance of the adaptive subsystem(s) with the production subsystem would probably be difficult.

Briefly stated, we see six constituencies with different orientations to effectiveness. Glancing down the columns, we note a production constituency geared to maintaining adequate throughput for effectiveness; a support

Table 3  
Hypothetical Matrix

Properties	Constituencies	
	Internal	Boundary Spanning
Input	-	-
Throughput	-	-
Output	-	-

Table 4  
Illustrative Example of a Throughput Cycle Matrix

Problems	Constituencies					Buyers
	Production	Support	Managerial	Adaptive	Vendors	
Resource Acquisition	0	1(7)	1(9)	0	1(10)	0
Personnel Function	0	1(5)	0	1(8)	0	0
Boundary Management	0	1(8)	1(8)	1(7)	1(10)	0
Appropriate Technology	0	1(6)	0	0	1(10)	0
Efficiency	1(10)	1(9)	1(7)	0	0	0
Quality Control	1(8)	0	1(7)	0	0	1(9)
Inventory Control	0	1(8)	1(9)	1(6)	1(4)	1(6)
Boundary Management	0	1(8)	1(8)	1(6)	0	1(9)
Sales	0	1(6)	1(10)	1(4)	1(0)	1(10)

subsystem concerned with providing inputs and moving outputs as criteria of effectiveness; vendors and buyers who perceive the organization as effective to the degree that resources are absorbed and products provided; a managerial constituency oriented primarily to the combined effectiveness criteria of the internal constituencies; and an adaptive subsystem potentially at loggerheads with or uncoordinated with the others, viewing effectiveness in terms of responding to a changing market environment. One can see conflicts, coalitions, and the need for some cooperative problem solving in this scenario.

Across time, changes effected by successful problem solving and/or the environment could cause changes in the matrix, with attendant changes in constituency demands. Suppose new, large markets opened up for the firm in a much less competitive environment. Emphasis on inventory control, buyers and sales might slacken, and emphasis on resource acquisition and efficiency might heighten. This could bring the perceptions of management and the internal subsystems into greater accord, bridge some differences with vendors, and drive the adaptive subsystem into a realignment of its priorities to avoid loss of influence in the organization (e.g. more intensity in management of boundaries on the input side). In this kind of dynamic analysis, we can see changes in the problem mix leading to changes in the perception of how effectively the input-throughput-output cycle is operating.

We have tried to show in this example how the differing positions of constituencies lead to different problems demanding solutions, and different conceptions of organizational effectiveness. These differing preferences can also have influence on each other, as constituencies are interdependent with respect to problem solving.

This matrix approach lends itself to some well developed statistical methods in the areas of scaling, group problem solving and coalition formation, and statistical modelling. In terms of research methods and measurement, the field of organizational behavior has developed some sophistication in measuring and analyzing these types of concepts, though more work is certainly needed.

An additional use of this matrix viewpoint is in the diagnosis of organization behavior and effectiveness. We can envision the detailed collection of data in this format as a valuable heuristic device for managers in the analysis of constituency and subsystem behavior. The value of constructing the matrix is in revealing how subsystems and organizational problems vary in their salience and interrelations as a function of constituency perspectives. This would help clarify the different sets of motives and demands which influence how constituencies and subsystems behave. The manager could use this information to formulate policies and decisions which take into account this pluralism of concerns.

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#### IV. CONSTITUENTS, ENVIRONMENTAL TURBULENCE AND ORGANIZATIONAL EFFECTIVENESS

Gerald H. B. Ross

A contingency approach to effectiveness will be advocated based on the assumption that, in the long run, organizations will strive for survival (exceptions being acknowledged). More specifically, it will be argued that effectiveness criteria should be contingent upon certain characteristics of the environment. In particular, the role of turbulence and of constituencies will be examined in an effort to reconcile the natural systems and goal models.

##### Background to the Problem

Since the beginning of the industrial revolution, organizations have become increasingly more specialized in the pursuit of greater efficiency. Unfortunately, this pursuit set in motion forces which tended to decrease stability. Efficiency was largely achieved through the substitution of capital for labor, a process which has had two important effects.

First, it has favored larger scale units, often accomplished through mergers or takeovers, which could take advantage of certain economies of scale. A dramatic example is provided by the automotive industry which was reduced from literally hundreds of firms to only four.

The mere reduction of variety, itself, has profound implications for stability. Economists were perhaps the first to document and analyze its effects. They pointed out that oligopoly, with few firms, tends to exhibit more uncertain market behavior (e.g., unpredictable price wars) than pure competition, with many firms. The impact of one large firm on a few others is simply greater than that of a small firm's impact on many. Ecologists, (e.g., Holling, 1978) similarly, have noted the increasing instability in regions (e.g., in terms of infestation by pests, erosion, climatic change, etc.).

Second, the new capital intensive technologies became much more fragile than the earlier manual methods, because of much greater interdependencies. Standardization tended to reduce the ability of a system to adapt and to increase dependency both on the factors of production and on the environment at large.

One has only to compare the fragility of a jet aircraft to a person on horseback. The former is probably much more efficient but can be incapacitated by any one of a large number of events. Mechanical problems (both with the aircraft itself, or with the guidance and landing systems), strikes, lack of fuel or weather can stop the total system functioning. The horse, although far slower, needs no landing field, eats grass where it travels and does not even require roads.

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This is not to suggest a return to the horse and buggy era. The airplane provides undeniable benefits. However, the untrammelled pursuit of efficiency has left many organizations, and indeed society itself, in a precarious position. The specialization inherent in our technology systems has introduced dependencies and rigidities which make many of our organizations extremely vulnerable to turbulence in the environment; and yet, the increased concentration of organizations may have established the very pre-conditions for the turbulence which threatens the organizations themselves. In such an environment, what is organizational effectiveness?

#### An Approach to Organizational Effectiveness

The measurement of organizational effectiveness is somewhat simplified if the assumption is made that organizations, over the long term, perhaps in decades or even hundreds of years, attempt to survive. This does not deny that some organizations are designed to self-destruct, e.g., task forces, project teams, or that there may exist destructive tendencies in management that may virtually defy survival, as in Henry Ford's reluctance to abandon the Model T, in spite of its obvious waning popularity. Nor does it imply that an organization that does not survive must have been, *ex post facto*, ineffective. A grocer in Hiroshima in 1945 can hardly be called shortsighted for not having foreseen an atomic catastrophe. This assumption is based on a Darwinian perspective that organizations generally try to survive, even in extreme conditions when their stated goal becomes patently obsolete; the March of Dimes displayed great versatility when faced with the virtual extinction of polio among children; it simply selected a new disease and continued functioning.

The importance of the role of this assumption can perhaps be more clearly seen in the parallel domain of financial accounting, which attempts to roughly measure organizational efficiency. The assumption is made that the organization is a 'going concern', that it will continue in business in the foreseeable future. Assets, for example, are thus measured at their original cost (perhaps adjusted for inflation), since their value will be consumed or depreciated in the course of production. This value would not be appropriate, however, if the assumption were changed, as for example, with a bankruptcy. Nonetheless, such exceptions tend to reinforce the 'going concern' assumption rather than negate it.

The use of an overall assumption represents an alternative to the stipulation of some ultimate criterion. The latter is largely unmeasurable but, at least, serves to clarify the selection of lower order, measurable criteria (Seashore & Yuchtman, 1967). In any case, the choice of an overall assumption, as opposed to an ultimate criterion, is probably more esoteric than practical, since neither can be easily operationalized. Both can, however, help structure the measurement problem.

In the measurement of organizational effectiveness, the choice of the survival assumption is not merely one of convenience. It reflects the current thinking of virtually all systems-based disciplines, including general systems theory (including cybernetics, ecology and biology). Systems are seen as adjusting to external perturbations to re-establish equilibrium-homeostasis. A system seeks to maintain its integrity by

responding and adjusting to change. Similarly, this adjustment process has been observed in organizations by many researchers in the behavioral sciences. Conceptualizations of the latter, and their implications for organizational survival, will be discussed in the following section.

#### Organizational Environments and Effectiveness Criteria

There has been considerable thought and research devoted to the classification of organizational environments (e.g., Burns & Stalker, 1961; Emery & Trist, 1965; Lawrence & Lorsch, 1969; Thompson, 1967). Generally they are seen as evolving from a simple/static state to a complex/dynamic one. The latter is commonly called 'turbulent'. Figure 1 below presents one variation on this model. Duncan's (1972) framework is shown here for purposes of illustration since it is one of the more current and simple versions. The simple/complex dimension is related to the number of factors or components in the environment and their similarity to one another. The static/dynamic dimension is related to whether or not the components are changing.

Figure 1

Environmental State Dimensions

	Simple	Complex
Static	I	II
Dynamic	III	IV

In the first two quadrants, perhaps the traditional domain of organizations in the past, the situation is seen as relatively stable and predictable. Here, it can be argued, the most appropriate measure of organizational performance would seem to be efficiency, or the difference between resource inflows and outflows, perhaps as approximated by profit.

As long as there are no large unexpected changes, organizations can continue almost indefinitely 'transforming' inputs into outputs. Furthermore, past results can provide a good indication of future performance.

In the third quadrant, more uncertainty is introduced because the 'actors' are now fewer and behave more unpredictably, thus having a greater effect on each other. In other words, uncertainty is significantly increased. The situation has been well recognized in economics. This cell typifies the oligopolistic market structure. Unpredictable price wars and other serious disruptions in the market can occur.

In the fourth quadrant, as generally understood, a new factor is added. Not only do the actions of the participants cause 'perturbations' but there appear certain dramatic 'systems effects' which can greatly amplify the actions of the former. The analogy has been made to soldiers marching in-time on a bridge. Their rhythmic footsteps may start the bridge oscillating so violently as to risk collapse. Such resonances tend to amplify the individual inputs and, as such, are called 'systems effects'. The fourth cell is thus called 'turbulent'.

In such a turbulent environment, the main criterion for organizational effectiveness would seem to be the capacity to absorb or adapt to such dramatic change, rather than historical efficiency. Steers (1975) catalogues the popularity of adaptability/flexibility criteria among organizational theorists. In fact, those organizations which perform best in stable conditions (i.e., turn out the most widgets for the least cost) may be prime candidates for failure in a turbulent world, because of the over-specialization needed to achieve high efficiency.

Thus the most appropriate effectiveness criteria for an organization would seem to be contingent upon the structure of the environment. At one extreme, in the simple/static situation, net outflow, the excess of outputs over inputs, would seem most suitable. At the other, some ability to cope with turbulence would appear more relevant. In between, probably a combination of criteria is needed.

This elegantly simple illustration of the organization in its environment unfortunately requires some modification in the cold light of reality. The next section discusses some of the important issues.

#### Complications in Defining Organization-Environment Relations

While 'turbulent fields' are typically differentiated from their less dramatic counterparts by the presence of systems' effects, there has been little success in operationalizing the concept. In fact, some confusion has been noted concerning what is a system's effect and what is not (Pfeffer & Salancik, 1978). Furthermore, in spite of what seems like great turbulence (political, economic and social) in the world, a 'pure' turbulent environment, like 'perfect competition' in the market place, seems hard to find; and when it is, as during revolution, it tends to be the exception rather than the rule.

A more manageable conceptualization might be an environment in which there are 'turbulent episodes'. Periods of relative stability may be rudely interrupted, for example, by sudden changes in resource availability, as occurred in the oil crisis of 1978. An analogy might be made to an aircraft which, in the middle of an uneventful flight, unexpectedly encounters turbulence for a brief period. Later, the craft may be flying along smoothly again. In such a situation, it may be more relevant to analyze the turbulent episode, with respect to survival of the aircraft, than to try to classify the whole flight as being in one or other type of environment. In fact, at a more detailed level of analysis, it might be most appropriate to study those parts of the aircraft particularly subject to stress (e.g., the wings), rather than less exposed components (e.g., the galley).

The concept of 'turbulent episodes' helps resolve the problem of characterizing an organization as functioning in a particular quadrant in Figure 1. Turbulence might occur in any one of them but would, however, tend to be far more frequent in the last two quadrants.

The reason that turbulent episodes might occur in any of the quadrants is a result of the increasing interdependence between all entities in modern society. Many organizations, for example, were affected by the dramatic drop in the dollar, even if they did not deal in foreign currencies. The recent British truck strike appears to have profoundly affected many organizations, through interdependence, that did not normally depend on trucking. It is simply increasingly difficult to remain insulated from major turbulent episodes in society.

#### Turbulent Episodes in the Environment

An organization's environment is not a monolithic whole but is differentiated into segments. It is extremely useful, for example, to distinguish between the immediate environment, consisting largely of constituents, and that part of the environment lying beyond the constituents.

This distinction is an important one, particularly with respect to turbulence. Turbulent episodes originating from a particular constituency usually trigger a bargaining process between the organization and the offended party. The labor strike is a classic example of this situation. When the episode originates outside the constituents, however, there is no one with whom to bargain. The situation cannot be stabilized simply by negotiation. The dynamics of the two situations can thus be very different.

Finally, it is important to make one further refinement on the notion of organizational environments. Environments do not simply exist, they must be related to the organization under consideration. In fact, organizations create the immediate environments in which they function. Weick (1969) uses the term 'enacted environment' to describe this process. Thus, when a firm commences operation, it defines the shareholders, community, etc., in which it operates. It may also cease operations in a particular environment, at which point, the latter no longer has any relevance to the firm.

The next section will examine the immediate environment, consisting of the organization's constituents. The following section will discuss the dynamics of turbulent episodes in the environment beyond the constituents.

#### Present Conceptualizations of the Constituent

Chester Barnard (1938) was probably the first modern writer to view the organization from the general systems framework--as one relying on many constituents. In fact, he even defined an organization as a system of cooperative activities, a concept that was revolutionary in its time. "The life of an organization depends upon its ability to secure and maintain the personal contributions of energy (including the transfer of control of materials or money equivalent) necessary to effect its purposes." (Ibid, p. 92)

The present conceptualization of organizational 'constituents' has changed little since Barnard's time. The view of these parties as having a bargaining relationship with the organization is still very much in vogue today (e.g., Yuchtman & Seashore, 1967; Pickle & Friedlander, 1967; Katz & Kahn, 1978; Keeley, 1978; Cameron, 1978). However, there still remain a number of issues concerning our understanding of the notion of constituencies that have yet to be worked out.

First, there remains a dearth of theory concerning the trade-offs in inducements between constituents (e.g., Hall, 1972). Some attempt has been made to use Pareto optimums (see discussion by Keeley, 1978) with little success. Pickle and Friedlander (1967) have shown some overlap, albeit modest, between the satisfaction of constituents. However, current research has yet to fully explore the problems associated with satisfying one constituent to the detriment of another.

Second, the general systems perspective, involving energy importation from many constituent sources, has generally resulted in the blurring of distinctions between the different constituent groups. This may have resulted from an over reaction against the mechanistic, input-output orientation. Some inquiry has centered, however, around the nature of dependency on resources provided by constituents (Yuchtman & Seashore, 1979). Thompson (1967) stated that dependency varied proportionately with the organization's need and inversely with the availability of alternative sources for the resource (see also Blau, 1964). Pfeffer and Salancik (1978) have slightly refined these notions, but the implications for constituent behavior and organizational responses remain largely uncharted. Particularly disappointing has been the lack of rigorous theory development on this issue which was recognized by Barnard, over forty years ago, as being crucial to the survival of the organization.

Third, the interface of constituents with the organization has been the source of some confusion. For example, if employees are constituents, are they 'inside' or 'outside' the organization? Furthermore, are they more 'inside' than customers or other constituents? Pfeffer and Salancik (1978) discuss the matter at some length and present the state of present thinking. The essential problem has been where to draw the boundary line. Those authors review alternative conceptualizations including a gradient approach, analogous to the heat transfer processes in thermodynamics. Their conclusion was that constituent activities represent the relevant variables rather than the constituents themselves.

When it is recognized that it is behaviors, rather than individuals, that are included in structures of coordinated behavior, then it is possible, at least conceptually, to define the extent to which any given person is or is not a member of an organization. A person's inclusion in a collective structure can be defined as the proportion of his or her own behavior included in that particular behavior structure divided by the total amount of the person's behavior in all structures. (Ibid, p. 31)

This represents an interesting attempt to circumvent the boundary problem but exceptions immediately spring to mind. It is possible for a constituent to spend a great deal of time involved with an organization and still play an insignificant role. The classic student apathy concerning university political affairs is an example. In spite of many hours spent in the classroom and studying, many students may avoid any kinds of participation, even during lectures. Similarly, a wealthy 'little old lady' may own a majority holding in a corporation but fail to show any interest in corporate affairs. These examples do not negate the propositions of Pfeffer and Salancik but indicate that the participation and boundary questions need further refinement. An alternative conceptualization of the organization and its constituents will be discussed in the next section.

#### An Alternative Conceptualization of Constituents

An alternative representation of the constituents, as overlapping rather than separate bargaining entities, is presented below. It sees the constituents as having interlocking as well as opposing interests. Furthermore, it suggests that constituent groups are not undifferentiated. There are important differences between them that may be critical for the organization.

Initially, it may be useful to consider a single constituent group and how it interacts with the organization. The discussion can then be expanded to multiple constituencies.

The constituent has a set of concerns with respect to organizational performance in its broadest sense. Customers, for example, may be concerned with product cost, quality and service. Furthermore, they may also be interested in more general issues such as social responsibility (e.g., the hiring of minorities, pollution abatement, energy use, etc.). Together these form the set of concerns for the customer--an important constituent. This is represented in Figure 2.

Figure 2  
Customers' Concerns



The shape of the diagram in Figure 2 above has no particular significance and the size (i.e., area) may expand or contract over time. Furthermore, the actual composition or content may change as new issues and concerns evolve. The boundary line, moreover, is permeable, admitting or releasing concerns through osmosis. This process is analogous to Field Theory, first articulated by Lewin (1935).

Of course, the customer is not the only constituent--there are a number of others. If we consider the employees, for example, their concerns are generally different but not entirely so. There may be some overlap. Customers may perceive that it is important to have conscientious, well-motivated employees because of the possible effect on product design and quality.

Figure 3  
Relationships Between Two Constituents

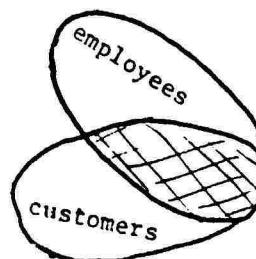


Figure 3 presents the situation, with the shaded area indicating common concerns. Of course, there are also significant areas of no overlap where there may be important issues regarding trade-offs between constituents.

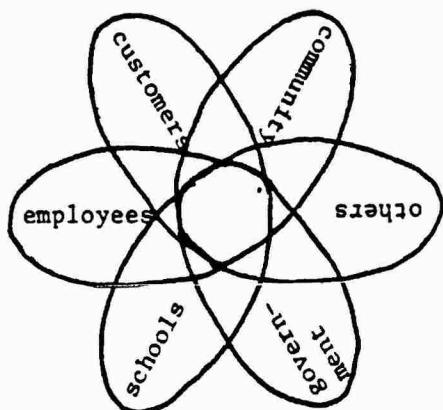
The area of common concerns may expand and contract in response to changes in the individual constituent concerns. Furthermore, the overlap is largely based on the perceptions of the parties involved rather than on objective factors alone. This area can thus be influenced by superficial means, such as advertising, as well as by substantive issues.

The organization may thus be set in the context of all its various constituents, with areas of both mutual and individual concerns.

In Figure 4, there is not only the overlap between constituents but, at the center of the 'wheel', there is an area common to all members. This is primarily concerned with 'system maintenance'. In other words, all parties have an interest in the continued operation of the organization.

If the system fails entirely, everybody loses. Shareholders lose profits; employees lose their jobs, customers lose familiar brands and on-going product services, etc.

Figure 4  
The Organization's Constituents



Next, further from the center, there are the areas of mutual concerns between specific constituents, discussed earlier in Figure 3. These tend to be associated with somewhat higher order concerns than mere system maintenance and are generally related to mutual or compatible self-interests. Here the benefit to one party may also benefit a second and perhaps a third. Greater cooperation between the constituents might be expected.<sup>1</sup>

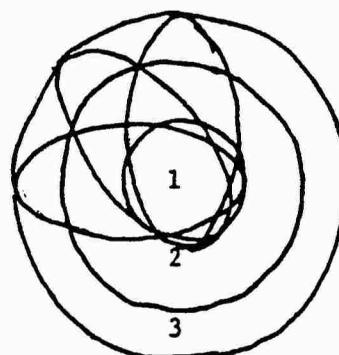
Finally, at the periphery, there are the areas of complete self-interest. Here, for example, when a union seeks the highest possible wage settlement, benefits to others may actually be reduced. The problems of trade-offs between constituents may result in a contest for resources.

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<sup>1</sup> The proximity of one constituent to another does not imply a lack of commonality with more distant constituents. Each one is a neighbor to all others.

Figure 5 illustrates how the different levels of concern overlay on the "constituents' wheel". These levels represent three zones that may have important implications for the measurement of organizational effectiveness. They are called, working outwards from the center, the zones of concurrence, cooperation and consent.

Figure 5  
The Three Constituent Zones



Zones of:

1. Concurrence
2. Cooperation
3. Contest

The nature of the interrelationships between constituents has been demonstrated by Pickle and Friedlander (1967) who found a modest overlap as indicated in Table 5 below. It can be seen that some relationships are stronger than others and that all are in the anticipated direction (i.e., are positive).

Table 5

Intercorrelations of Satisfactions of Seven Parties-at-Interest with Ninety-seven Business Firms						
	Satisfaction of					
	Community	Government	Customer	Supplier	Creditor	Employee
Owner satisfaction	.93*	-.12	.37**	.14	.00	.25*
Community satisfaction		.16	.04	.16	.14	.22*
Government satisfaction			-.09	.11	.20*	-.07
Customer satisfaction				.17	.23*	.23*
Supplier satisfaction					.08	.17
Creditor satisfaction						.08

SOURCE: Reprinted from Harry Pickle and Frank Friedlander, "Seven Societal Criteria of Organizational Success," p. 171, Table 1, 1967

\* $p < .05$

\*\* $p < .01$

The Pickle and Friedlander study remains one of the few which explores the relationships among the various constituents. There is, however, one further domain of inquiry that holds some promise for future research.

In the field of marketing, 'social judgement theory' has been developed (e.g., Sherif et al., 1973) which analyzes the degree of involvement by consumers. Particularly interesting is that the theory delineates 'latitudes' of acceptance, rejection and non-commitment.

The relative sizes of the latitudes of rejection, acceptance, and noncommitment differed systematically according to the extremity of the person's stand. Briefly, with increasing attitude extremity, the latitude of rejection became increasingly larger and greater than the latitude of acceptance, while the latitude of noncommitment became increasingly smaller, even vanishing. (Sherif, et. al., 1973).

This approach shows promise with respect to the other constituents. The width of latitudes might indicate both the likelihood of stability of present performance and the possible direction of sudden shifts. The narrowing of latitudes would indicate increased risk of change in the current status.

### The Dynamics of Turbulent Episodes

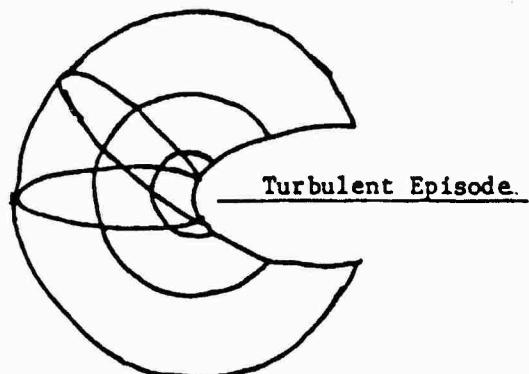
It is intuitively clear that organizations are often profoundly affected by entities with whom they do not normally bargain. The dramatic drop in the value of the U.S. dollar over the past year has seriously affected many firms. However, they cannot get together and bargain with someone to sort out the problem. It would be difficult to argue that the world financial community is part of the environment, for example, of a small greengrocer in Des Moines; but the latter may have just experienced a dramatic increase in interest rates because of the Federal Government's efforts to shore up the dollar.

Turbulent episodes can also occur, more directly, through the constituents. Although turbulence has traditionally been defined as 'system effects' which occur independently of the 'actors' (Burns & Stalker, 1961), the constituent boundaries are highly permeable because constituents fulfill many other roles in society (Katz & Kahn, 1978). Sudden shocks in the environment, such as the drastic change in many social values in the 1960's, can often be rapidly transmitted by the constituents through to the organizations.

Although this second type of turbulent episode is transmitted by constituents, parties with whom the organization might normally bargain, severe episodes (e.g., the campus riots, also in the 1960's) may cause such polarity as to make bargaining impossible or, at least, ineffective. Figure 6 below presents the dynamics of a typical turbulent episode.

Figure 6

A Turbulent Episode



The turbulent episode, because of its suddenness and force, may threaten the very existence of the organization, or at least be very costly. Such events, it can be argued, will become even more common because of the fragility of most of our technical systems. The price for efficiency has been high interdependency, low adaptability and, therefore much greater vulnerability to turbulent episodes.

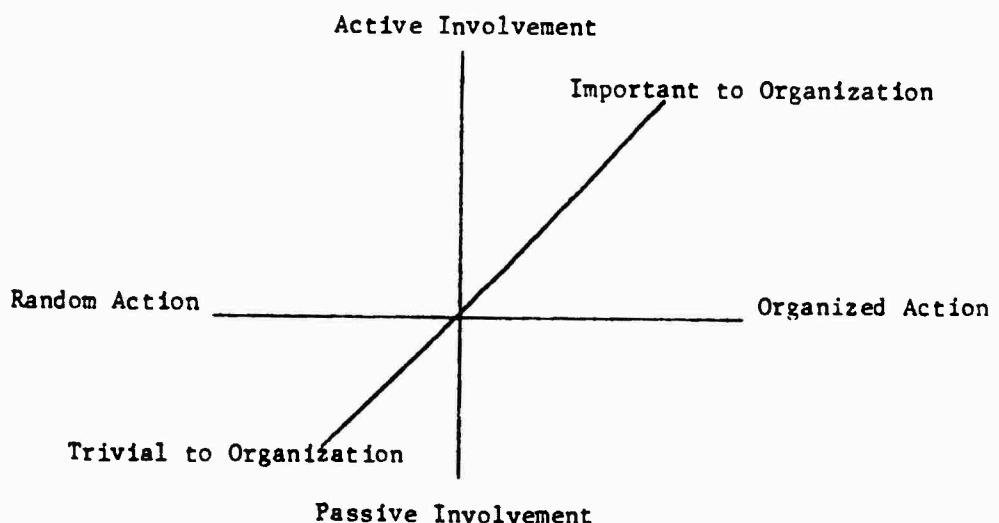
### Survival: The Measurement Problem

At the beginning of this paper, the case was made for 'survival' as the ultimate criterion for organizational effectiveness. This case has been made before but has been difficult to operationalize in practice, except with the luxury of hindsight. Here, however, a contingency approach has been elaborated which has identified certain effectiveness criteria related to different types of environments. The more simple and stable the environment, the more appropriate are efficiency criteria; the more turbulent, the greater the need for adaptability.

It is proposed here that these criteria may be reflected in certain structural properties of the organization. These will be briefly considered below, with reference to turbulent episodes originating both from the constituents and from the environment at large.

With respect to the former, it is suggested that the width of latitude of involvement is a prospective indicator of whether or not a constituent might generate turbulent episodes. The severity of the impact would, of course, depend on two other factors: (1) whether or not the constituents were organized or fragmented, and (2) the importance of their input to the organization. Figure 7 thus presents a three dimensional model to measure the potential impact of a turbulent episode. As the constituents shift upward and to the right, the impact of their actions becomes increasingly strong.

Figure 7  
Constituent Impact Model



For turbulent episodes originating from outside the constituents themselves, the organization basically has three options. First, it can simply absorb the impact as, for example, when a company endures a period of financial loss. This is clearly a short term solution, however. It cannot

endure indefinitely. Second, it can spread its risk by diversifying (e.g., by having a wide range of consumer products), so that a particular turbulent episode will cause only minor or localized damage. Third, it can have its resources in sufficiently fluid or flexible form that they can be redeployed at a moment's notice.

These three strategies would seem to suggest that measures be developed relating respectively, to such factors as:

1. Organizational slack, financial and productive capacity reserves.
2. Diversity, variety
3. Versatility, available options

There is one further strategy, however, that may help the organization resolve competing demands from different constituents. It can cultivate mutual constituent awareness to increase the overlap between various constituents. This economizes on organizational inducements, tending to 'kill two birds with one stone'. A fourth type of measure of effectiveness would be the degree of overlap, perhaps expressed as a ratio of the inner to outer circles presented earlier in figure 6.

As was mentioned at the outset, factors such as those discussed above do not guarantee survival. They merely provide measures of the organization's prospects of survival. Furthermore, such measures have been shown to be important in predicting survival in ecology and in other system-based disciplines.

#### Conclusion

The purpose of this paper has been to stimulate discussion concerning a contingency approach to organizational effectiveness. In particular, certain structural variables are seen as being important indicators of an organization's prospects for survival.

It is recognized that such effectiveness measures complement, rather than replace, traditional measures of organizational efficiency. The relative weighting may be decided on the basis of environmental considerations.

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## V. THE ASSESSMENT OF ORGANIZATIONAL EFFECTIVENESS

Denise M. Rousseau and Larry H. Ford

The concept of organizational effectiveness is one of the most intractable in organizational science. There exists little consensus about the concept itself, and the researcher or manager who goes beyond the abstract concept to the operations of measurement finds the problems compounded. Nevertheless, the concept is a critical one, and there has been little response to the occasional suggestion that it simply be abandoned. Researchers use the concept for evaluating organizational structures, processes and environments and for testing theoretical propositions relating to them (e.g. Bachman, Smith & Slesinger, 1966; Bowers & Seashore, 1966; Ivancevich & Donnelly, 1970). Others explore the nature of the concept itself by examining the relationships among various effectiveness criteria (e.g. Cameron, 1978; Seashore, Indik & Georgopoulos, 1960). Whether used as dependent variables incidental to other purposes, or as descriptive variables of intrinsic interest, it would be difficult for researchers to do without measures purporting to represent organizational effectiveness.

In a commentary on two recent attempts to explore the concept of organizational effectiveness (Goodman & Pennings, 1977; Spray, 1976) Steers (1978) described the available ideas and models as having the "consistency of gelatin", offering little guidance to the researcher or manager seeking to evaluate effectiveness. In the inquiry of which this report is a part we take a more optimistic view, holding that the "gelatin" does indeed have a discernable structure, albeit a complex one, and that a more richly developed model of organizational effectiveness can serve not only to clarify the concept but also can provide some guidelines for those who wish to represent the concept operationally. Chapter I displays the main features of such a model and explores certain of its characteristics and implications. We employ that model, now, as a framework for evaluating the contemporary operational practices of researchers in two respects: first, as a basis for assessing the scope of topical coverage, and second, as a basis for suggesting some directions of improved practice in measuring effectiveness. Ideally, the practice of measurement should be guided by some plausible conceptual model, or parts of such a model. The model, in turn, should serve to indicate the deficiencies, if any, in measurement activities undertaken.

This chapter starts with a condensed version of one model of organizational effectiveness, and then turns to a discussion of the value orientations and value sources that may be invoked when assessing organizational effectiveness. There follows a commentary on the empirical literature and the extent to which it conforms to such a model. The terminal section suggests directions for the improvement of measurement practices in the future.

## DEFINING ORGANIZATIONAL EFFECTIVENESS

The model we suggest as a basis for evaluating the contemporary practices in measurement of organizational effectiveness stems from open systems theory coupled with derivations concerning the required problem-solving activities within organizations.

All organizations must solve certain basic problems that stem from their fundamental system properties (Georgopoulos, 1972; Georgopoulos & Cooke, 1979). Fundamental system properties are attributes of organizations derived from the patterned activities of a number of individuals. Systems theorists (e.g. Katz & Kahn, 1978; Miller, 1972) characterize open systems in general and organizational systems in particular in terms of several attributes that reflect the organization's internal structures and relations with its environment. Basic organizational system properties include the following, according to Georgopoulos (1972):

Differentiation--the diversity of organizational structures and functions. Organizations typically move in the direction of increased elaboration of internal structures, although degrees of differentiation may vary considerably among organizations.

Interdependence--mutual influence among members, roles, or structures so that the responses of one organizational unit are contingent upon those of another.

Continuity--relative stability of the organization's relations with its environment. Organizations carry on regular and more or less predictable interchanges with their environments, particularly in terms of the energy and information the organization imports from the environment and the output it exports.

Openness--the permeability of the organization's boundaries manifested in the importation of energy and exportation of output.

Environmental Interdependence--the mutual influence of the organization and its environment on each other.

Task Potential--the capacity to provide goods and services to be consumed by segments of the environment or, more generally, the capacity to transform inputs into outputs. This property derives from the task demands in response to which the organization was created.

The grounds for assessing the effectiveness of organizations is formed by these system properties through the basic problems each property generates. Differentiation gives rise to coordination problems, in response to which activities of members and subunits must be articulated in time and space so that they converge toward attainment of some common objectives. Differentiation also induces problems of integration. Integration involves convergence of member aspirations and goals with those of the organizational

unit (personal integration) and convergence of the patterns of the various structures and functional specialties encompassed by the organization with respect to intended outcomes, i.e. structural integration. Integration and coordination differ in that integration involves binding components or units to the system while coordination involves arranging the activities so that they mesh. The property of interdependence also contributes to problems of both coordination (March & Simon, 1958; Thompson, 1967) and integration. The property of continuity facilitates internal maintenance of stability and order within the organization, a basic systems problem, but it exacerbates the adaptation of the organization to environmental changes. The properties of openness and environmental interdependence give rise to problems of adaptation and external maintenance. Adaptation involves changing the organization to respond more appropriately to the environment while external maintenance involves changing the environment to respond to the organization. All organizations must address the problems of resource acquisition and output disposal, each of which derives from the organization properties of openness and task potential. The problem of task accomplishment also derives from task potential, the capacity of the organization to provide goods or services.

Thus each property, as a fundamental attribute of organizational systems, generates problems that require solution. How well the organization solves these problems affects the organization's viability and hence its effectiveness. Organizational effectiveness can then be viewed as the degree to which such generic problems are solved or managed.

We suggest that "managed" may in fact be the appropriate term since permanent solutions to problems arising from basic systems properties are not likely to occur. The problem solving model of effectiveness advocated here involves two assumptions: (1) As long as the organization exists, few problems remain solved and (2) Few problem solutions fail to generate still other problems (Georgopoulos, 1979). These assumptions follow from the basic interdependencies among persons and activities within organizations. The organization's complexity and interdependence with its environment make permanent solutions virtually impossible.

We note as an aside that the currently popular models of organizational effectiveness reflect only partially the many problems that organizations face. The natural systems model represents certain facets of an organization's adaptation to its environment. The goal model largely represents an evaluation of how well the organization accomplishes its tasks according to some specified criteria related to transactions with the environment. How well the organization solves other critical problems, such as coordination or maintenance, is not addressed directly by either model.

In sum, as part of a conceptual model for assessing empirical practices in measuring organizational effectiveness, we propose that organizations be considered effective to the degree that they manage the array of generic problems associated with their systemic properties, and do so through problem solving activities which moderate, or render manageable, the problems that are generated by prior problem solving activities.

### Effectiveness for Whom?

It has been suggested, that organizational effectiveness may be evaluated "...from the perspective of the organization itself" rather than from the self-interested perspective of "the society", or some particular set of participants such as the owners, or a dominant coalition (Yuchtman & Seashore, 1967). This view presupposes either that there exist some values that are inherent in the organization itself and that are more illuminating than mere survival of the organization, or some set of organizational requirements such as those proposed by Georgopoulos. We here take the view that evaluations of effectiveness are made, in fact, by many constituencies, from different value bases, and that all significant constituencies must be taken into account. The logic is simple: if an organization fails to satisfy, at least to some minimal degree, the expectations of a constituency, a problem has been created that invites or requires solution. As a practical matter in empirical assessments of organizational effectiveness, only "significant" constituencies need be taken into account. A significant constituency is one whose disaffection would threaten to create unsolvable problems for the organization.

The nature of constituencies is explored elsewhere in this series of reports. It is sufficient here to enumerate certain of their properties. Constituencies comprise sets of people, or of organizations, that are interdependent with the focal organization of study, and that have some degree of enforceable claim upon the input and/or output transactions of that focal organization. The significant constituencies of an organization may include, for example, customers or clients, suppliers, the community in which the organization is located, governing agencies concerned with taxation or environmental standards, and innumerable others. A special class of constituencies, sometimes called "inside" constituencies, may comprise shareholders, the managers, the employees, or a board of directors, for example, each such constituency having a potential for uniqueness in their standards for judging the organization and each having the potential for moderating or exacerbating the problems with which the organization must cope.

In the context of reviewing the contemporary empirical work on organizational effectiveness, we suggest that adequate evaluation methods must take some account of an organization's constituencies and the adequacy with which the interdependencies are managed. This should include both risk and cost factors to the focal organizations as well as beneficent exchange relationships.

As an aside, we note that organizational researchers commonly conform to, or choose for themselves, some definable and coherent value perspective to employ when evaluating organizational effectiveness. They, too, particularly when serving also as consultants, may impose influential expectations upon an organization, and thus by intention or inadvertence may be acting as a constituency of an organization. In any case, we suggest that researchers should be explicit about the constituencies whose value perspectives are incorporated in their choice of operational variables--particularly if the perspective is distictively their own.

### Levels of Evaluation

As presented here, our model of organizational effectiveness is oriented expressly toward effectiveness at the level of an intact, "whole" organization including its comprised functional subsystems and its various parts or subunits. However, it has applicability as well for subunits. In operational practice, those who assess organizational effectiveness often focus upon subunits or other subsystems. They may do so because the intent is explicitly to evaluate such subunits, or because the evaluation of subunits is judged to be a convenient and efficient strategy for evaluating the encompassing whole organization.

We consider that the model legitimately may be applied to subunits provided that the supra-organization is then treated as part of the environment, or as one or more constituencies with which the focal subunit must interact. It is problematic, however, to draw evaluative conclusions about the supra-organization from data about the subunits. The assumptions of isomorphism and additivity between levels is likely to be valid only in the special circumstance when each subunit is a microcosm of the whole, dealing with the same types of problems, the same set of constituencies, and the same environmental contingencies as the parent organization. In such a rare case, the effectiveness of the comprising organization may well be the sum or average of the effectiveness of the component parts, or the parts may well be valid indicators of the effectiveness of the whole. We argue, nevertheless, that when such assumptions are employed in the empirical practice of measuring organizational effectiveness they must be explicitly recognized and plausibly defended.

The issues of level of measurement and sources of data are largely independent of the foregoing matter. To evaluate the effectiveness of a specified organization it is necessary to have information that plausibly describes the whole of that organization. However, valid descriptive information may be derived from observations that describe components of that organization (e.g. members, departments, functions, etc.) and may be derived from information sources other than the focal organization itself. The crucial questions concern the aggregation and disaggregation of primary data, and the risks of unwarranted interpretations that may accompany such transformations of the data.

### LITERATURE REVIEW

These rather lengthy discourses on conceptual matters have set the stage for a review of contemporary empirical practices relating to the assessment of organizational effectiveness. The following pages will address in succession: (1) The treatment of the generic problem areas which organizations must "solve" or "manage" in order to be judged effective; (2) The reference to significant constituencies and their value perspectives; (3) The purported and actual levels for analysis and interpretation; and (4) The appropriateness of the data sources, and the procedures for aggregation and disaggregation of data in instances when cross-level transformations are employed.

The literature to be cited is to be found in abstract form in the appendix to this report. It consists of 76 published reports screened from over 1,000 sources that might have been cited. Selection of reports to be mentioned is based upon diversity rather than upon statistical representation. The aim has been to include the best as well as some of the most typical instances of various approaches to the measurement of organizational effectiveness.

#### An Overview

This review of empirical studies of organizational effectiveness supports five general conclusions:

1. In general, assessments of effectiveness have lacked a theoretical basis or rationale. Researchers commonly fail even to state what they mean by effectiveness.
2. Although task accomplishment is the most frequently evaluated problem area, assessments of effectiveness cover a wide range of organizational problems. Thus, assessment of effectiveness in terms of problem solving adequacy is shown to be a highly feasible, theoretically-based approach to effectiveness assessment.
3. The constituencies reflected in assessments of effectiveness are highly restricted. In most cases, assessment reflects criterion values attributed to a constituency by the researcher rather than empirically established values.
4. Although the nature of effectiveness may differ from one level of analysis to another, operationalizations of effectiveness at the subunit and organizational levels are not explicitly differentiated by researchers.
5. Use of data derived from one level to assess effectiveness at another is common. Aggregation of data leads to ambiguities of specification and interpretation, particularly when assessments are derived from aggregated individual-level data (e.g., performance, turnover, and questionnaire responses). Few researchers appear to be aware of these problems.

#### Theoretical Basis for Assessments

If, as Steers (1978) says, current models of organizational effectiveness have the consistency of gelatin, it is not surprising that researchers operationalizing organizational effectiveness generally offer no theoretical basis or other rationale for their use of the concept. Of the studies reviewed here, about 75 percent presented no theory or definition of effectiveness--rather, they report only the operational methods used (e.g., Kimberly & Nielsen, 1975; King & Smith, 1972; Lieberson & O'Connor, 1972; Linn, 1970). The "goal" and "natural systems" models predominate in the

remaining studies with slightly over 10 percent operationalizing effectiveness as achievement of either organizational goals (e.g., Osborn & Hunt, 1974; Reimann, 1975) or goals set by an external clientele (Coulter, 1979). Only a handful of studies derived their conceptualizations of effectiveness from a natural systems model, using such definitions as exploitation of the environment (Rushing, 1974) and fulfillment of organizational and environmental needs (Friedlander & Pickle, 1968). This lack of a theoretical basis for assessing effectiveness is associated with an almost random heterogeneity of effectiveness measures used in organizational research. Measures range from managerial ratings of overall effectiveness (e.g., Bachman, Smith & Slesinger, 1966; Hall & Lawler, 1970; Kavcic, Rus, & Tannenbaum, 1971; Molnar & Rogers, 1976) and objective performance criteria (e.g. Lieberson & O'Connor, 1972; Mapes & Clarke, 1975) to perceived conflict resolution (Kimberly & Nielsen, 1975) and staff morale (King & Smith, 1972). From these assessments, it appears that effectiveness is generally conceived as a diverse set of goal-related outcomes with primary data derived from subunit and individual-level sources. No other consensus appears regarding the meaning of the term "organizational effectiveness".

#### Problem Areas

Criteria measuring organizational effectiveness are diverse and often seem to defy integration. However, we argue that diverse operationalizations of effectiveness reflect the assessment of different problem areas. We will explore the effectiveness criteria used by researchers and the problems they reflect.

Many possible effectiveness criteria are associated with each problem area. Task accomplishment, perhaps the easiest problem area for which to develop criteria, can be assessed in such terms as quantity or quality of goods and services, costs, or profit in a profit making firm. Such criteria are often the most tangible effectiveness measures, and for some organizations they are of evident importance to several constituencies. Adequacy of task performance is by far the most frequently assessed type of effectiveness criteria, with measures ranging from profit (Lieberson & O'Connor, 1972; Negandhi & Reimann, 1973; Willits, 1967), patient discharge rate in hospitals (Berk, 1977), student achievement levels in schools (Bidwell & Karsada, 1975), and costs (Bowers, 1964; Ellsworth, Dickman & Maroney, 1975; Seashore & Yuchtman, 1967; Student, 1968; Zald, 1967) to number of scientific publications (Box & Cotgrove, 1968) and global task performance ratings (Hall & Lawler, 1970; Osborn & Hunt, 1974; Pinto & Pinder, 1972; Pritchard & Karasick, 1973; Seashore, Indik, & Georgopoulos, 1960; Willits, 1967). The vast majority of studies include assessment of task accomplishment adequacy.

Integration is another frequently assessed problem area. Integration takes two forms: personal integration and structural integration. Personal integration, i.e., the convergence of member aspirations and goals with those of the organizational unit, can be assessed through measures of how well employee needs or desires are satisfied by the unit. Measures of employee satisfaction and morale (Bowers & Seashore, 1966; Friedlander & Pickle, 1968; Reimann, 1975) and member freedom and autonomy

(Box & Cotgrove, 1968) reflect the adequacy of personal integration. Structural integration, i.e. the convergence of organizational structures (e.g., the fit between information and authority structures), can be operationalized by measures of the compatibility of structures and the extent to which structures remain intact and are used. In the present instance, structure is defined as the patterns of linking and coupling among organization members and units. These patterns may be based on hierarchical position (authority structure), organizational norms (normative structure), or the process of disseminating information (information structure). The extent to which structures are compatible, and are used, reflects structural integration. The adequacy of this form of integration is reflected in measures of managerial perceptions of the integration of organizational units (Mahoney & Weitzel, 1969), consensus about responsibility for decision making (Grinyer & Norburn, 1975), and administrative efficiency (Schermerhorn, 1977).

Coordination adequacy, the degree to which member and subunit activities are articulated in time and space, can be operationalized in terms of such variables as member and subunit conflict, adequacy of joint planning, and the percentage of joint deadlines met. Past research on effectiveness has employed measures reflecting coordination adequacy: interpersonal relations or conflict (Evan, 1965; Neghandi & Reimann, 1973), scheduling and coordinating with other department (Mahoney & Weitzel, 1969; Molnar & Rogers, 1976; Neghandi & Reimann, 1973), and planning and agreement about goals (Van de Ven, Walker, & Liston, 1979).

Adequacy of resource allocation can be assessed in terms of the extent to which materials, personnel, information, and influence are available when needed and used efficiently. It is reflected in operationalizations of effectiveness such as perceived influence (Indik, Georgopoulos, & Seashore, 1977; Rowland & Scott, 1968), openness of communication (Kimberly & Nielsen, 1974), and utilization of manpower (Neghandi & Reimann, 1973).

Criteria assessing the adequacy of adaptation, changes in the organization in response to a changing environment, may reflect the rate of innovation or the compatibility and responsiveness of the organization to environmental change. Researchers have employed such measures as rate of innovation (Becker & Stafford, 1967) and perceived adaptability (Warren, Mulford & Yetley, 1976).

Internal maintenance, maintaining stability and order within the organization, can be evaluated along several dimensions: the extent to which the organization is able to retain members and rely on their continued involvement in the organization, the adequacy with which organizational activities are formalized into standard procedures, and the adequacy with which new members are socialized. It is represented in measures of turnover (Berk, 1977; Marrow, Bowers & Seashore, 1967; Ivancevich & Donnelly, 1970; Reimann, 1975), accidents (Seashore, Indik & Georgopoulos, 1960; Student, 1968), rate of managerial succession (Grusky, 1963), and cohesion (Rosen, 1970). External maintenance, i.e. attempts by the organization to change its environment, can be evaluated in terms of the degree to which the organization is able to control its environment through advertising,

political activities, and other means of environmental manipulation. However, it is seldom assessed in research on organizational effectiveness. The Yuchtman and Seashore (1967) and Bowers & Seashore (1966) measures of market penetration strategy come closest to representing external maintenance adequacy in the literature on effectiveness.

Resource acquisition, i.e. garnering necessary organizational inputs, can be assessed in terms of the amount and quality of the inputs obtained as well as their fit to the organization's needs. Such criteria of organizational effectiveness, however, are rarely used. In one case of educational systems, use was made of rates of general fund appropriation, and rates of acquisition of previously-tenured faculty, transfer students and outside scholarships (Cameron, 1978). Growth of assets (e.g. Becker & Stafford, 1967) and resource acquisition practices such as investment with subunits have been used (Molnar & Rogers, 1976). In an unusual study of insurance sales branches, it was found that the rate of acquisition of new salesmen, coupled with the proportion of business generated by newer salesmen, was a significant effectiveness indicator (Bowers & Seashore, 1966).

Related to the acquisition of resources is the problem area of output disposal. In principle, all "products" including wastes should be considered, but few examples are to be found in the literature of any measures of output disposal other than those based upon an inference from productivity and the assumption that all good product is readily disposed of. Researchers generally have overlooked such activities as warehousing, idle stock, customer servicing, waste disposal and sales activity, although studies in sales organizations have considered sales rates and costs independently of the organization's disposal requirements (e.g. Bachman, Smith & Slesinger, 1966).

The problem areas represented in the criteria of effectiveness used by researchers are quite diverse. Studies generally combine criteria from different problem areas without acknowledging their distinct meanings and implications for organizational effectiveness. Operationalizations of effectiveness in any given study often cut across several problem areas: coordination, interdependence, and resource acquisition (Molnar & Rogers, 1976) and personal integration, coordination, and task accomplishment (Negandhi & Reimann, 1973), for example. Yet, different relations between variables may be expected when criteria reflect different problem areas. It may be necessary to begin formulating hypotheses regarding organizational effectiveness where the problem areas involved are specified. The diverse criteria manifest in effectiveness research suggest that the methodology already exists for researchers to use the framework described here.

#### Constituencies

Constituencies have two roles in studies of organizational effectiveness: (1) they can act as evaluators of how well the organization is solving various problems, through ratings of organizational activities, and (2) they can be sources of data on outcomes that reflect problem solving adequacy (e.g., employee turnover or absenteeism and customer complaints).

In past research on effectiveness, when constituencies act as determinants of effectiveness, they are almost always within the organization. And almost always these internal constituencies are managers and/or employees (i.e. hierarchical categories), not representatives of the distinct subsystems within the organization. When employees are asked regarding their evaluation of organizational effectiveness, the influence of departmental affiliations or functional roles on these evaluations is rarely considered. Perceptions of employees as members of specific organizational subsystems (e.g., production, internal maintenance, or boundary management) are not differentiated.

Ratings of effectiveness or problem solving adequacy by members of the managerial subsystem are frequent in effectiveness research, particularly in the form of overall or global ratings (e.g., Bowers, 1964; Comrey, High & Wilson, 1955a; Comrey, High & Wilson, 1955b; Comrey, Pfiffner & Beem, 1953; Georgopoulos & Tannenbaum, 1957; Indik, Georgopoulos & Seashore, 1961; Lawrence & Lorsch, 1967; Molnar & Rogers, 1976; Osborn & Hunt, 1974; Pritchard & Karasick, 1973; Seashore, Indik & Georgopoulos, 1960).

Although employees generally are not asked to provide global ratings of organizational effectiveness (see Van de Ven, Walker & Liston, 1979, for an exception), several studies assess employee perceptions of how well certain problems such as coordination or adaptation are handled (e.g., Bowers & Seashore, 1966; Comrey, High & Wilson, 1955a; Friedlander, 1966; Georgopoulos & Tannenbaum, 1957; Indik, Georgopoulos & Seashore, 1961). Measures of employee satisfaction with the organization may themselves be viewed as global measures of effectiveness from the employee's perspective (e.g., Bowers, 1964). Generally, it is in studies using surveys of organizational climate in which the employees' perceptions of problem-solving adequacy are most directly assessed.

External constituencies are scantily reflected in assessments of effectiveness. By far the most thorough study assessing effectiveness from the perspective of both internal and external constituencies remains the Friedlander and Pickle (1968) study of effectiveness in small organizations. Friedlander and Pickle defined effectiveness as the fulfillment of organizational and environmental needs and assessed it according to the perspectives of seven organizational constituencies: the community (support the organization gives to community organizations), government (managerial ratings of compliance with governmental demands), customers (customer survey of service quality), creditors (creditor satisfaction measured through surveys of banks, retail associations, and Dun and Bradstreet), suppliers (supplier survey of costs of filling orders, organization's records on meeting financial obligations, and stability of relationship with suppliers), owners (financial return and enjoyment of ownership), and employees (satisfaction). Five of these constituencies are clearly external to the organizations, although some of these data are derived from managerial perceptions of their relationship with the constituency. The constituency of owners is sometimes difficult to classify clearly as internal or external. In some firms, the owners may be a parent organization or absentee stockholders. However, in organizations such as the small businesses studied by Friedlander and Pickle, owners may also act

as managers and thus may combine the concerns of management with those of ownership. Community concerns are reflected to some extent in King and Smith's (1972) measure of mental patient rehabilitation through a survey of the patient's family and friends. Competitors' perceptions are reflected in the evaluation of manufacturing firm effectiveness by the executives of similar firms (Willits, 1967). And university student attrition may be used as an indicator of customer satisfaction (Cameron, 1978), though other factors beyond the university's control may influence such a measure. Yet, despite these investigations into external constituency perspectives on effectiveness, few studies derive data from sources clearly outside the organization. Virtually all studies obtain effectiveness data from organization records, managerial ratings or employee responses to questionnaires. In the present review, 50 studies used organization records, 40 used employee reports, and 37 used managerial ratings. Most studies combined data from two or more sources.

Internal constituencies do possess overall data relevant to organizational effectiveness, but they are incompetent judges of many factors. How well the organization solves the problems it must solve is not adequately assessable through internal sources alone. The disposal of outputs such as pollution and other wastes, for example, may be evaluated differently by members of the organization than by the government or the community. Yet eventually outsiders may take action against the organization based on their own evaluation of the adequacy of output disposal. The quality and safety of products is often evaluated differently by makers and users. Thus, under some circumstances, an external constituency's evaluation may be more relevant to gauging problem solving adequacy than is the information the organization itself possesses. The omission of direct input from outside constituencies in most organizational assessment studies no doubt arises in part from the cost and inconvenience of seeking outside data. We think, however, that such a cavalier treatment of important external constituencies is no longer acceptable as a prevailing practice.

Though criteria used to assess effectiveness may reflect different perspectives, few studies explicitly address the role of constituencies. To a great extent researchers infer that the presence of archival data (e.g. on costs, patient discharge rates, and number of scientific publications) correctly reflects the priority criteria held by managers. Few studies have sought to determine directly how a constituency evaluates various criteria of effectiveness (see Mahoney & Weitzel, 1969, for an exception). Many studies reflect only the researcher's beliefs or suppositions about others' priority effectiveness measures.

#### Organizational and Subunit Effectiveness

Although the term organizational effectiveness connotes organization-level phenomena, it refers in practice to criteria at both the organization and subunit (department or work group) levels. Assessments made at the subunit level are quite similar to those at the organization-level except in one major respect. The 31 subunit-level studies reviewed here commonly relied on global managerial ratings of subunit effectiveness, in effect invoking the values of a powerful "external" constituency (Aram, Morgan,

& Esbeck, 1971; Bowers, 1974; Comrey, High & Wilson, 1955a; Comrey, High & Wilson, 1955b; Comrey, Pfiffner & Beem, 1953; Evan, 1965; Georgopoulos & Tannenbaum, 1957; Nealey & Blood, 1968; Tannenbaum, 1962; Zald, 1967). Others employed archival performance measures such as patient discharge rates, number of articles published, accidents, or units produced (Berk, 1977; Bowers, 1964; Bowers & Seashore, 1966; Comrey, High & Wilson, 1955b; Georgopoulos & Tannenbaum, 1957; High, Wilson & Comrey, 1955; Lodahl & Porter, 1961; Ronan & Prien, 1973; Rosen, 1970; Seashore, Indik & Georgopoulos, 1960; Wilson, Beem & Comrey, 1953).

Subunit effectiveness assessments give first importance to the problem of task performance. A few studies examined internal maintenance criteria such as cohesion (Marcus, 1962; Rosen, 1970) and turnover (Student, 1968). A few used personnel integration criteria (Parker, 1963; Smith & Ari, 1963). These subunit assessments of nontask-related effectiveness criteria all employ data obtained directly from subunit employees.

Although none of the reports give explicit attention to differences between subunit and organizational effectiveness, researchers clearly operationalize subunit effectiveness very narrowly. Few problem areas are represented in subunit assessments and only internal and archival sources are used, thus restricting the number of constituencies whose criteria are tapped. However, like their parent organizations, subunits are systems embedded in an environment composed in part of external constituencies. For this reason, research on effectiveness at the subunit level must consider the interdependence among subunits when conceptualizing and assessing the effectiveness of the parent organization, as well as that of the subunits themselves. In nearly decomposable systems (Simon, 1969), the interactions and interdependencies among subunits is weak, though not negligible; the effectiveness of each subunit is largely independent of that of the others. More often, the subunit interdependencies are intense; they compete with each other for resources, provide essential exchanges, and create problems for each other. Like "whole" organizations, each subunit must maintain a favorable balance of inputs and outputs to remain viable. Yet, from the perspective of the parent organization the subunit may be judged more effective if it optimizes the effectiveness of the related units rather than optimizing its own internal effectiveness. The destructive consequences of imbalance of inputs and outputs among subunits are legendary in some industries (e.g. banking, auto assembly). While empirical studies often focus upon subunits, these studies seldom take account of discontinuities and conflicts that may have important implications for the supraorganization.

#### Aggregation

While empirical studies of organizational effectiveness commonly focus upon interpretations at the organizational or subunit level, they also commonly draw their primary data from levels below the units studied. Of the entries in the empirical report inventory over 70 percent involve the collection of data at one or more levels lower than the units of analysis. The use of such multi-level data sources introduces problems of aggregation and consequently of interpretation. Two gross kinds of data may be distinguished: (1) "global" data not divisible across subunits such as work

groups or persons, and (2) aggregated data derived from such subunits or persons. While aggregated data legitimately may be used to describe higher-level units, there are risks of misinterpretation and of loss of significant information (Blalock, 1968, 1980; Roberts, Hulin & Rousseau, 1978).

When we assess a unit's effectiveness at, say, coordination, by averaging member perceptions of coordination, we risk confounding a characteristic of the unit of evaluation with characteristics of the informants and their immediate situations. An individual (indeed most individuals) may validly report a high degree of coordination on the basis of their own limited experience and perceptions even though the unit as a whole is deficient in coordination. In such an instance, averaging the responses of members does not serve the intention to remove some of the error of fallible reporters, but serves instead to affirm the error as to unit-level coordination. A measure of unit-level coordination obtained directly at the level of the unit (e.g. percentage of unit downtime or of deadlines met) would not be subject to such bias.

There exist techniques for moderating the risks of misinterpretation associated with the use of aggregated data. On such matters the employees of a unit can and do function as expert participant-observers, reporting not their own unique experiences and personal reactions to them, but reporting their observations about the unit of analysis. Similarly, "objective" data may be sought about work groups or other subunits that are oriented to the description of the supra-organization rather than to the description of the subunit itself. Finally, many perceptions, states, behaviors and events are additive or confirmatory in an unbiased way; purists who advocate total avoidance of cross-level transformations ignore the fact that unique, convenient and valid data would thus be discarded.

Techniques for estimating bias due to aggregation do exist (Hannan, 1971). Further, there are relatively simple means for testing the appropriateness of the use of aggregated data. If the between- $u$  its variance in individual-level data is greater than the within-units variance, easily estimated by such techniques as ANOVA, then it is reasonable to assume that the aggregate scores represent unit-level phenomena. Such partitioning of variance indicates that individuals within the units of aggregation have some consensus about their unit. If the within-units variance is greater, then the individual effects are most probably masking any unit-level effects. Although such checks for aggregation exist and are simple to apply, they have been used very infrequently by effectiveness researchers (see Georgopoulos & Tannenbaum, 1957, for an exception). To continue to use aggregate data without even the most rudimentary precautions cannot be defended on any grounds.

#### Data Quality

As a final sad note, we mention that while most investigators show sophistication in assessing the statistical properties of their independent variables they often neglect to test, or to report, the qualities of their dependent variables as to reliability of measurement, stability over time, and convergence among alternative operational measurement methods. The

exceptions to this observation pertain mainly to criterion variables derived from employee surveys or from subunits below the level of interpretation; such data are often assessed for their quality. Many researchers, however, accept without question the "construct validity" and "reliability" of data of record, even though it is known that such data are commonly lacking in both respects.

#### SUMMARY AND RECOMMENDATIONS

In this chapter we have presented a framework for the assessment of organizational effectiveness that derives from the view that all organizations, and all organizational subunits, share a set of common properties which in turn generate a common array of continuing or recurrent types of problems. Effectiveness is conceived as the adequacy of the solution of these problems and, more importantly, their solution in ways that avoid the creation of unmanageable new or exacerbated problems. An effective organization, it follows, must deal adequately with the full array of problem types, and must possess a problem solving capacity applicable to the full array of problem types. Special emphasis is given to the idea that new or changed problems may have their origins either "inside" or "outside" of the organizational system and that they commonly, although not always, are associated with the interests and potential influence of the organization's significant constituencies.

This is not a neatly bounded and specified model. It recognizes uniqueness in the specific array of problems facing a particular organization at a particular time. It is open-ended in the sense that any combination of environmental factors and internal system properties may lend crucial importance to an organizational property or performance that previously was inconsequential. It allows comparisons among organizations, not in the detail of specific measures of performances or systemic properties, but (at a higher level of generality and abstraction) as to the evaluated adequacy of management of generic problems. Such "evaluations" are diversely located in constituencies of unlike judgement, not singularly in the persons of managers, or of employees, or of researchers.

The "reality" this model is intended to represent is complex and unstable. One response of organizational theorists has been to distrust the concept of organizational effectiveness: some have recommended that it be regarded only as a metaphor (Pondy, 1977) or that it be totally abandoned (Hannan & Freeman, 1977). The response of empirical researchers, for the most part, has been to employ effectiveness indicators of convenience, of narrow topical reference, and of value reference chosen by tradition or chance rather than by deliberate consideration. We suggest that by employing the framework presented here, empirical researchers may make better choices, more knowing omissions, and more plausible interpretations of their necessarily limited empirical data. If this is the case, the concept of organizational effectiveness can continue to be a useful one in organizational science.

A review of the contemporary practices in the empirical assessment of organizational effectiveness reveals gross deficiencies of kinds that can be remedied. Several prescriptions emerge to guide future work.

1. There should be a more explicit acknowledgement that effectiveness is a value laden concept and that different constituencies may well hold different views. A prudent researcher will either define and explain the narrowness of value reference of his work or else attempt to obtain data representing multiple constituencies.
2. The value framework that dominates the literature, for the most part, is that attributed to "management" and that is reflected in the dominant, and often exclusive, use of variables representing or interpreted as work-related goal attainment. The importance of such measures is not questioned. What is questioned is the attribution by researchers to managers of such a narrow focus for organizational evaluation. The few more comprehensive studies that have been reported suggest otherwise; the increasing vulnerability of organizations to "outside" influences suggests that there is a ready market among managers and others for effectiveness indicators of broader scope.
3. It follows from the two foregoing points that researchers should turn some attention to the tasks of identifying the significant constituencies of the organizations they study, and to the means for employing data obtained from outside of the organizations.
4. The dominance of the use of primary data from or about individual members, or of organizational subunits, puts the researcher at risk because of the ambiguities of interpretation of aggregated data. The prescriptions are two in number: take more care in deciding which measures may be so treated, and invest effort in obtaining supplemental or confirmatory data directly referring to the level of the units to be evaluated.
5. When treating a population of subunits within an organization the researcher should give attention to their interdependencies, and distrust the assumption that data about the subunits is necessarily additive or confirming.
6. It is a prevalent feature of the empirical literature that the researcher is an organizational scientist preoccupied with theories or applied problems concerning limited aspects of the internal functioning of the organizations studied. For this reason, most reports deal with some sophistication with the independent variable side of their research design but assume that almost any convenient variable(s) will adequately serve as dependent variables. We suggest that in causal and relational analyses, both "sides" of the descriptive and interpretive models merit equal attention and care.

7. Researchers have often failed to give appropriate attention to the assessment of the statistical qualities of their effectiveness indicators. Issues of reliability of measurement, stability over time, and convergent validity of alternative operations need investigation, and the results would improve the practices.

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## APPENDIX

### ANNOTATED BIBLIOGRAPHY OF SELECTED REFERENCES

Over 1,000 sources were identified through a search of computerized bibliographic systems, through visual scanning of recent books and journals, and through inquiry of experts. Scanning reduced the roster to about 200 items, with exclusions based upon redundancy, technical deficiencies, and inadequate reporting. The remaining items were read in detail and coded for their conceptual, empirical and analytical characteristics. Thirty-three items were selected for inclusion for their contribution to conceptual resources or as representative instances of prevalent conceptualizations and are presented in Part I. below. Seventy-six items were similarly selected to represent contemporary empirical practice. These are presented in Part II, below.

#### PART I: CONCEPTUAL RESOURCES

Larry H. Ford and Denise M. Rousseau

This section presents abstracts of 33 published books, papers, and chapters that represent the currently available conceptual resources upon which theories of organizational effectiveness may build.

The choice of materials was based upon the selective inclusion of the best available representations of maximally diverse contributions. We think that all important contributions are represented. We know that many early sources, and many excellent contemporary sources, are purposefully omitted on grounds of duplication or of absence of any distinctive additional ideas. Many references are omitted on grounds that, in our judgement, they add confusion, not clarity, and add verbiage but not supplemental information. We expect our choices to be challenged.

The literature cited is notable for its recency. Of the thirty-three abstracts, only three were published earlier than 1970. Twenty-five were published during the five-year period 1975-1979 and, of these, ten appeared in a 1979 collection of papers edited by Paul Goodman and Johannes Pennings, New Perspectives on Organizational Effectiveness.

The persistent themes running through most of these contributions are: (1) The need for complex, multivariate models and concepts; (2) The requirement that different and incompatible value orientations be taken into account; (3) That effectiveness be evaluated with reference to an organization's environment; and (4) That the effectiveness of an organization needs to be evaluated differently according to the analytic or interpretive use that is intended.

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Argyris, C. Interpersonal competence and organizational effectiveness.  
Homewood, Ill.: Richard D. Irwin, Inc., 1962.

"Administrative competence is related to the organization's abilities to achieve its objectives, maintain itself internally, and adapt to its external environment." Competence is thus a potential indicator of effectiveness.

Argyris emphasizes two kinds of competence, technical and interpersonal. Although both are important, interpersonal competence has (or had) perhaps been neglected in the past. Argyris asserts that interpersonal competence has a significant impact on organizational effectiveness. To the extent that organizations value rationality and that irrationality is present in interpersonal relations, there will be inherent conflict between organizational and individual values.

Given the hypothesis that interpersonal competence is related to organizational effectiveness, Argyris then proposes a system of diagnosis and treatment, based primarily on group-based training procedures.

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Argyris, C. & Schon, D. A. Organizational learning: A theory of action perspective. Reading, Mass.: Addison-Wesley, 1978.

"....organizations tend to create learning systems that inhibit double-loop learning that calls into question their norms, objectives, and basic policies". "...the very information needed to detect and correct errors becomes undiscussable". The authors propose a process of inquiry which allows organizational adaptation to internal and external requirements.

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Beehr, T. A., & Newman, J.E. Job stress, employee health, and organizational effectiveness: A facet analysis, model, and literature review. Personnel Psychology, 1978, 31, 665-699.

Eleven "organizational consequences" are proposed based on a review of the literature: changes in the quantity or quality of job performance; increase or decrease in withdrawal behaviors (absenteeism, turnover, early retirement); changes in profits, sales, or earnings; changes in ability to recruit and retain quality employees; changes in ability to obtain raw materials, increase or decrease in control over environment; changes in innovation and creativity; changes in quality of work life; increase or decrease in employee strikes; changes in level of influence of supervisors; and grievances. Organizational consequences are distinguished from human consequences, both of which are influenced by an

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interaction of personal and environmental variables. Both people and organizations engage in adaptive responses (presumably more or less appropriately) which in turn have effects on personal and environmental variables.

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Campbell, J. P. The structure of organizational effectiveness. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

A value stance is necessary in any approach to effectiveness, both to create some scale or scales along which an organization may be located and to decide what uses such value scale locations may have. Among the uses of effectiveness indicators are decision-making, planning, and comparison.

Campbell identifies two basic approaches to organizational effectiveness, the goal-centered view and the natural systems view. The goal-centered view assumes "that the organization is in the hands of a rational set of decision makers who have in mind a set of goals that they wish to pursue" (p. 19). The natural systems view assumes "that if an organization is of any size at all, the demands placed on it are so dynamic and complex that it is not possible to define a finite number of organizational goals . . . the organization adopts the overall goal of maintaining its viability . . ." (p. 20). Campbell asserts that if proponents of these two views expanded their areas of interest, they would essentially be looking at the same things. Proponents of the goal model would begin to look at system variables to explain why organizations differ in goal attainment. Natural systems researchers would measure goal attainment to see how it is related to various system variables.

Specific examples of the goal-centered view include the industrial/organizational psychology criterion model, cost-benefit analysis, management by objectives, and the behavioral objectives model. Specific examples of the natural systems model include operations research, organization development, and the Likert-ISR model.

Campbell proposes a list of criterion measures of effectiveness. The list includes the following: overall effectiveness, productivity, efficiency, profit, quality, accidents, growth, absenteeism, turnover, job satisfaction, motivation, morale, control, conflict/cohesion, flexibility and adaptation, planning and goal setting, goal consensus, internalization of organizational goals, role and norm congruence, managerial interpersonal skills, managerial task skills, information management and communication, readiness, utilization of the environment, evaluations by external entities, stability, value of human resources, participation and shared influence, training and development emphasis, and achievement emphasis.

Campbell makes several recommendations about the necessary steps in assessing effectiveness. First, one must adopt an explicit model or theory of effectiveness. Second, one must determine the uses to which the assessment will be put. Third, the task objectives of the organization must be specified. Finally, Campbell urges a departure from large-scale surveys and an emphasis on simulation and intensive case studies.

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Campbell, J. P. Structures for organizational effectiveness criteria and their implications. Paper presented at the annual meeting of the American Psychological Association, Washington, D.C., 1976.

Organizational effectiveness is the degree to which task objectives judged to be ends are accomplished. In the task objectives model, specific behavioral objectives must be used as criteria. The behaviors must be concrete and observable. The conditions or constraints under which the organization should be able to do them must be specified as must the degree of accomplishment. The distinction between means and ends must be clarified.

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Coleman, P. Organizational effectiveness in education: Its measurement and enhancement. Interchange, 1972, 3, 42-52.

Organizations have a matrix of purposes or goals. They include satisfying the human interests of members and nonmembers, producing goods and services, using scarce inputs efficiently, investing in self-viability, mobilizing inputs, and doing all this in conformance with codes (laws and norms) and in a rational manner. Effectiveness in organizations with high proportions of professionals is achieved primarily by participation in goal setting. Control in such organizations is essentially enforcing the acknowledgement of the existing and participatorily set goals.

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Cummings, L. L. Emergence of the instrumental organization. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1979.

Effectiveness is the degree to which members perceive the organization as instrumental to their own goals. The organization is characterized as a political arena in which members negotiate for their own ends. Actors in the organization can be determinants of organizational behavior and also constituents who make claims on the organization.

Cunningham, J. B. Approaches to the evaluation of organizational effectiveness. Academy of Management Review, 1977, 2, 463-475.

Seven evaluation models are presented. The author recommends that the evaluator select a model appropriate to what is to be evaluated or what is considered the focal point of the model. The rational goal model is appropriate for evaluating the performance of organizational structures and can determine how well an organization achieves its goals; the systems resource model also evaluates the performance of structures but it determines the decision maker's efficiency in allocating and using resources; the managerial process model evaluates the performance of the system's human resources and determines the capability or productivity of managers and/or the managerial process; the OD model evaluates the performance of human resources and determines the organization's ability to work in teams and to meet the needs of its members; the bargaining model (organization as resource-distributing system) evaluates the impact of decisions and determines how resources are used to achieve organizational goals; the structural-functional approach evaluates the impact of structures on performance and determines the organization's ability to develop necessary structures; and the functional approach evaluates the external impact of organizational activities and determines the organization's ability to meet the needs of key client groups.

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Evan, W. M. Organization theory and organizational effectiveness: An exploratory analysis. Organization and Administrative Sciences, 1976, 7, 15-18.

A systems theory perspective of effectiveness involves four systemic processes: inputs, outputs, transformations, and feedback. Effectiveness can be considered, both theoretically and empirically, as ratios of the processes or measures of those processes. Effectiveness is defined specifically as the system's capacity for coping with all four processes relative to its goal-seeking behavior. Evan lists nine ratios of interest, all concerning inputs, outputs, or transformations (or changes in them) and gives examples of possible operationalizations in various organizational settings.

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Georgopoulos, B. S., & Cooke, R. A. Conceptual-theoretical framework for the organizational study of hospital emergency services. Working paper #8011. Ann Arbor: Institute for Social Research, 1979.

Taking the open systems perspective, the authors describe relevant general systems properties and their interrelatedness. The next step is the derivation from those properties of a set of six generic system problems: integration, coordination, resource allocation, adaptation, maintenance, and strain management (a residual resulting from inadequate management of other problems). These problems are also interrelated in that managing certain problems may either exacerbate or facilitate the management of other problems.

In order to manage these ongoing problems, structures arise or are developed by organizations. First-order structures consist of the ordering and coupling of organizational members. Second-order structures comprise the performance programs that the organizations uses to deal with its systemic problems. The repeated cycles of events or patterned activities occurring in the organization constitute third-order structures.

The appropriateness of the type of problem solving in an organization with respect to a particular problem is a function of two dimensions, agreement or certainty regarding cause-effect relationships and agreement about preferred outcomes. Problem-solving processes differ on four dimensions: strategy, decision form, mode, and type.

General organizational effectiveness is described as a function of the problem solving behavior of the organization. Problem solving behavior will depend on the criticality of various problems, since not all problems will be present to the same extent in all organizations, and on the presence of appropriate problem solving structures. The adequacy of problem solving depends on the appropriateness of the problem solving to the certainty and agreement about causes and effects and desired outcomes. Organizational effectiveness, then, will depend on problem solving adequacy and the fit of structures to problems.

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Goodman, P. S., Schoorman, D., & Atkin, R. Organizational effectiveness as a decision-making process. Paper presented at the 39th annual meeting of the Academy of Management, Atlanta, Georgia, August 1979.

The authors present four basic theses: (1) there is no single model or theory of organizational effectiveness; (2) there is not likely to be any as models are typically value-based; (3) studies of organizational effectiveness will not test a theory but will explore various dimensions; and (4) to study relationships among indicators and determinants of effectiveness, six decisions must be made.

Those six decisions are as follows: (1) who (which constituency) defines effectiveness; (2) what indicators of effectiveness can be identified as outcomes, constraints, referents, or functional statements about relationships among events and standards or levels of effectiveness; (3) what the domains (construct space) of effectiveness are; (4) what levels of analysis (e.g., individual, group, or organizational) and aggregation are appropriate; (5) what the determinants of effectiveness indicators are; and (6) what the appropriate time frame is for measurement and analysis.

Thus, effectiveness must be limited to specified domains; a general model of effectiveness is not equally applicable across all organizations. The authors define effectiveness as follows: "the effectiveness of an organization on a given substantive dimension is specified by the functional form of the difference between the actual performance and the standard, given that the constraints have been satisfied."

Hage, J. Communication and organizational control. New York: Wiley-Interscience, 1974.

Hage asserts that the desirable state for organizations is steady state and that the corresponding undesirable state is instability. Further, there are two types of steady state, mechanical and organic. These types correspond, respectively, to two types of control: sanctions and high feedback with socialization. The two types of instability, anomic and anarchic, differ primarily in the complexity present in the system. Anomic instability occurs if the situation is complex but communication is insufficient and the organization is too centralized, formalized, and stratified. Anarchic instability occurs if complexity is low but centralization is also too low.

This model of effectiveness, though not explicit, seems primarily prescriptive. Organizations should tend to evolve from a mechanistic to an organic steady state, but the appropriateness of the organic or mechanistic structures will depend on various situational factors.

The concept of system is defined here as a set of interrelated variables. Hage's view, a cybernetic perspective, assumes that an organization is a system of variables comprising a production process with inputs, throughputs, and outputs and also assumes a process of feedback control over the system of variables. Two basic open system properties in particular, information/feedback and steady state/homeostasis, are of particular interest to cybernetic analysis.

The two central concepts in this book are coordination and control. Hage defines coordination as the integration of various parts of the organization and control as getting humans to behave according to some standards.

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Hannan, M. T., & Freeman, J. Obstacles to the comparative study of organizational effectiveness. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

Problems in comparing organizations include time, system boundaries, levels of analysis, and identification of exogenous variables. Three popular definitions of effectiveness, goal attainment, survival, and adaptability, are not mutually exclusive. Adaptation and survival may indeed be conceptually identical. However, neither goal attainment nor survival give good bases for interorganizational comparisons. Organizations with widely disparate levels of "effectiveness" may survive. Goals can rarely be directly compared. The authors suggest the study of the survival within populations of types of organizations (e.g., locally owned grocery stores, or banks). By comparing within populations of organizations, enough variance in survival may be present to allow meaningful interpretations.

Kahn, R. L. Organizational effectiveness: An overview. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives in organizational effectiveness. San Francisco: Jossey-Bass, 1977.

If effectiveness as a general construct in social science is dropped as more appropriate to engineering than science, then more specific criteria will be used with greater knowledge of the specific concepts involved. However, that would imply sacrificing the area of comparative studies of organizational effectiveness.

To develop an index of effectiveness would require locating goals and constraints in the same framework, choosing and weighting outcomes, and designating ranges or levels of outcomes which represent maximum levels of effectiveness. Confusing indicators and predictors may lead to unwarranted assumptions that certain processes lead to certain outcomes. Such assumptions should be clarified and treated as hypotheses, tested or not.

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Kallman, E. A., Reinhart, L., & Wahba, M.A. Organizational effectiveness: A review of theory and research. Proceedings of the Eastern Academy of Management, 1976, 1, 414-418.

There are four general approaches, the economic, survival, goal attainment, and systems resource approaches. The literature lacks a conceptual framework; the two possibilities for creating that framework would probably be either the formulation of an absolute definition of effectiveness which would permit interorganizational comparisons or the formulation of a contingency model of effectiveness which could at least address classes of organizations in classes of situations. Other problems raised include effectiveness for whom (i.e., which constituencies?), single vs. multiple goals, and evaluation over time.

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Killman, R. H., & Herden, R. P. Towards a systemic methodology for evaluating the impact of interventions on organizational effectiveness. Academy of Management Review, 1976, 1, 87-98.

Organizational effectiveness is a function of internal and external efficiency and effectiveness. The authors propose that internal efficiency is indicated by productivity, external efficiency is indicated by the acquisition of resources and the distribution of goods and services, external effectiveness is indicated by societal or environmental satisfaction, and internal effectiveness is indicated by member satisfaction. Overall organization effectiveness is a multiplicative function of these four concepts.

Kirchoff, B. A. Organizational effectiveness and policy research. Academy of Management Review, 1977, 2, 347-355.

A multiple-criteria approach with specified levels of importance of goals is necessary for productive policy research. Effectiveness can only be measured with respect to particular sets of derived or prescribed goals.

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Miller, J. G. The organization. In J. G. Miller, Living systems. New York: McGraw-Hill, 1978.

Miller describes organizations in the same terms that he describes all living systems from cells to supranational systems. His first description of organizational effectiveness equates effectiveness and efficiency.

The ratio of their (organizational processes) inputs to their outputs measures the efficiency or effectiveness of the system (p. 667).

Miller uses broad definitions of inputs and outputs comprising the total of all information and matter-energy coming into or going out of the organization. He goes on to discuss the problems of measurement and implies that measurement is problematic.

Next, Miller distinguishes between efficiency and accomplishing purposes effectively.

An organization can be efficient and yet not accomplish its purposes effectively. . . .input-output efficiency is insufficient unless interaction with the environment is good. . . .(the importance of efficiency)--depends on the view from the living system at which the evaluation is made (p. 668).

Thus, Miller implicitly raises the issue of constituencies and the problem of identifying the perspective from which effectiveness is evaluated. Further, he suggests some general conditions in organizations that should be conducive to effectiveness/efficiency. Those conditions include specialization, decentralization, and adjusting organizational processes so that "its components are sufficiently satisfied with the system to continue to carry out their functions in it" (p. 676).

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Mohr, L. B. The concept of organizational goal. American Political Science Review, 1973, 67, 470-81.

The systems resource model of effectiveness has as its central component goal attainment. The author proposes four types of goals.

Support goals or reflexive goals are survival goals selected to elicit adequate responses from system members. Output or transitive goals are directed outward toward the environment. Therefore, organizations may be effective transitively, reflexively, both transitively and reflexively, or in neither way. Naturally, the most "effective" organizations will optimize goal attainment both transitively and reflexively, since both outcomes, to some degree, are necessary for continued survival.

Constituencies are also mentioned in the guise of intent. A system may have goals for itself and for members. Members may have goals for the system, different from the system's goals for itself, as well as goals for themselves.

The measurement of goal attainment first requires determination of the composition of the goal set and the various intentions (effectiveness for whom) operative in the system.

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Nord, W. R. A political-economic perspective on organizational effectiveness, Paper presented at the Academy of Management, Atlanta, Georgia, August 1979.

The author assumes a definite and explicit value stance: that the greater good of society is the preferred goal for all components of that society. Traditionally, organizational theory has emphasized micro-quality criteria, those indicators which are relevant to individuals or individual organizations. The underlying assumption for these micro-quality criteria is that in a free market, with unbounded rationality available to decision makers, that which best serves individual components will also best serve society.

Nord urges increased emphasis on macro-quality criteria which deal essentially with how effective an organization is at helping a society reach societal goals. Those societal goals might include such concepts as equity, justice, and the maximization of human welfare. Further, Nord asserts that classical free-market assumptions may be inappropriate and that for an organization to be effective on traditional micro-quality criteria, such as profit or resource acquisition, may actually be counterproductive for society as a whole.

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Pennings, J. M., & Goodman, P. S. Toward a workable framework of organizational effectiveness. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

The organization is defined as an open system with exchange relationships with the environment. Organizations have subsystems that contribute to the whole and to each other and that have interdependencies with each other and the environment. A constituency is a set

of people with common interests. Internal constituencies comprise the dominant coalition and also others with typically less influence. Organizational effectiveness is indicated by the satisfaction of external and internal constraints and the attainment of goals specified by the dominant coalition to degrees or standards specified by the dominant coalition. Effectiveness is time-sensitive in that short range effectiveness may not always lead to long range effectiveness.

Constraints must be at least satisfied for the organization to be considered effective at all. Goals represent desired end states that may or may not be fully achieved. Since different constituencies may have different goals and impose different constraints, negotiating among constituencies occurs as a mechanism for determining priorities for organizational action.

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Perrow, C. Three types of effectiveness studies. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

In addition to the traditional research paradigm of variable analysis in effectiveness studies, determining relationships among variables, Perrow proposes two additional models that are complementary to variable analysis: gross malfunctioning analysis and revelatory analysis.

Gross malfunctioning analysis differs from variable analysis primarily in the population of organizations sampled. Perrow asserts that most research done on effectiveness is done on organizations that are at least average and often above average in their overall performance. Thus, effectiveness research has ignored the low end of the performance continuum, that end populated by grossly malfunctioning organizations. Such organizations should be relatively easy to identify. The value of such a research strategy, in addition to tapping types of organizations infrequently studied, would be in providing increased bases for change and improvement where they are most needed.

Revelatory analysis assumes that organizations are "intentional human constructions but not necessarily rational systems guided by official goals; as bargaining arenas rather than cooperative systems; as systems of power rather than creactive institutions; and as resources for other organizations and groups rather than closed systems" (p. 101). Further, revelatory analysis would emphasize the issue of effectiveness for whom. An organization may be effective if it allows a certain amount of exploitation by its members. Perrow predicts that such analysis would disclose large amounts of chance and random error in decision making since any organization is typically used by a variety of people to reach a variety of ends.

Pfeffer, J. Usefulness of the concept. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977, pp. 132-145.

Organizational effectiveness requires accurate perceptions, by persons representing the organization, of patterns of resource interdependence, constituent demands, and appropriate responses. To study effectiveness would involve examining the processes by which internal and external groups make preferences known, by which the organization perceives demands and constraints, and by which it makes decisions and takes action.

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Pondy, L. Effectiveness: A thick description. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

A loop practices what it preaches or demonstrates the concepts it is trying to explain. An acorn defines the rules for growth but does not contain a miniature of the final product; it contains information for action but not for outcome. An eolith is shaped by the uses to which it is put or adapts to meet demands from the environment. Play is activity that seems similar to other activities but is actually different in that the likely outcomes from play activity are different, purposively, from the likely outcomes of the similar activities.

Pondy affirms and extends the argument of Weick (see page 97) to the effect that organizations normally do many things and display properties that are typically excluded from formal theories of organizational effectiveness. For example, organizations may play, may be eoliths, or may be acorns. Effective organizations, from time to time, will exhibit properties not obviously associated with goal attainment or the maintenance of desired states and not generalizable across a set of compared organizations. Such properties facilitate, and may be necessary for, development and improvement if not carried to excess. Diversity among organizations is both desirable and unavoidable, leading to inherent difficulties in comparative research. Appropriate theories of effectiveness must take into account some necessarily vague and random variations. (See also Weick on p. A-17).

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Price, J. L. The study of organizational effectiveness. Sociological Quarterly, 1972, 13, 3-15.

Goals as indexes of effectiveness should be those held by the major decision makers, should focus on organizational as opposed to individual goals, should be operative as opposed to prescribed, and should focus on the intentions and activities of the organization. A problem associated with goals as indexes of effectiveness is the absence of general measures. The system resources perspective also precludes general measures but has, in addition, the problem of optimization

versus maximization and the problem of exclusivity, i.e., the denial of other indicators of effectiveness. Effectiveness should be a single construct and not composed of diverse other descriptors such as size or morale. The most appropriate measurement of effectiveness is through the pooled perceptions of internal influential individuals.

This article by Price drew the following reactions in "Comments and reply." Sociological Quarterly, 1973, 14, 271-278.

L. C. McCormick: Although the goal attainment approach to organizational effectiveness is the most viable, triangulation of measurement is necessary.

J. K. Benson: Asking people how good their organization is is not a good way to measure effectiveness because of variation in the interpretation of the question, the need for skills to synthesize information for a meaningful answer, and the assumption that there is normative consensus about the goodness of the organization.

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Scott, W. R. Effectiveness of organizational effectiveness studies. In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

On the possible existence of a universal criterion of organizational effectiveness, Scott is skeptical. Rather, he feels that a more useful approach is to consider who selects criteria for evaluation in an organization, how much consensus exists about criteria, and what the criteria are used for (e.g., as motivational factors, guides or constraints, or evaluation criteria). The criteria used to evaluate an organization may depend on the theoretical orientation of those who are choosing criteria (such as organizational scientists). Scott proposes three different "systems" models. The rational systems model views organizations as mechanisms for attaining goals; the natural systems model views organizations as both goal attaining and self-maintaining; the open systems model sees an organization as engaged in system-elaborating and system-maintaining activities.

The emphasis from the rational systems viewpoint is on productivity and efficiency. In the natural systems model, added to measures of productivity and efficiency are usually measures of support goals such as member satisfaction, profitability, and survival. From the open systems perspective, emphasis is on process rather than structure (i.e., the input, throughput, and output processes) and adaptability or flexibility.

Assessing effectiveness can involve examining outcomes, processes, or structures (or any combination). Although outcome measures are rarely pure, they are closest conceptually and empirically to the results of the organization's transformation process. Processes are

a step removed from the results of performance and are often used as surrogate measures when outcomes are indeterminate or will occur too far in the future (e.g., the evaluation of school systems). However, measures of process can be used as direct measures of outcomes if the relationship between process and outcome is known. Measures of structure are even further removed from the results of performance since structures may facilitate processes but can be misused.

Attempts to explain effectiveness must take into account two problems. Criteria are always normative, and there is probably no general definition of effectiveness that will satisfy all constituencies. The most useful direction will probably be contingency models that develop specific predictive models of effectiveness in limited sets of situations.

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Seashore, S. E. Criteria of organizational effectiveness. Michigan Business Review, July 1965, 26-30.

Organizations have multiple goals which may have different and changing importance. Goals may even be mutually exclusive and competitive. Criteria of effectiveness may be such ends themselves or means to such ends; they may be short-term or long-term in orientation; they may be hard or soft (objective or perceptual); or linear or curvilinear with respect to a value scale. Goals exist in a hierarchy. The ultimate goal is the performance over time at achieving formal objectives. Penultimate goals are shorter-term output criteria. Immediate goals are indicators of current functioning. Behavioral criteria may be used for evaluating the achievement of formal objectives and for predicting future goal achievement.

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Steers, R. M. Problems in the measurement of organizational effectiveness. Administrative Science Quarterly, 1975, 20, 546-558.

There are two approaches to effectiveness, normative and descriptive, which correspond roughly to contingency and universalistic models. The problem with the domain of effectiveness is that it is a construct with diverse frames of references or constituencies. There is also a general tendency for many criteria to be unstable over time. The author recommends an operative goal approach that uses actual behavioral intentions and "the capacity of an organization to use its resources successfully toward specific ends", a descriptive, flexible, weighted goal-optimization model.

Goal attainment is the capacity of the organization to use its resources successfully toward specific ends. Weighted goal optimization involves finding out how important certain goals are to a specific organization and evaluating effectiveness according to the attainment

of feasible, not necessarily the most desirable, goals. Thus, the goal approach Steers proposes involves efficiency in the use of resources, weighting goals in terms of importance, and determining the feasibility of specified goals.

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Turban, E., & Metersky, M. L. Utility theory applied to multivariate system effectiveness evaluation. Management Science, 1971, 17, 8817-8828.

System effectiveness is the sum of the values of performance levels on multiple criteria. The value (weight) of each criterion is the product of the relative importance of the criterion and the utility of the performance level of the system on that criterion. Raters are used to determine the utility and/or relative importance of criteria.

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Van de Ven, A. A framework for organizational assessment. Academy of Management Review, 1976, 1, 64-78.

Effectiveness is viewed as the compatibility among a set of organizational properties and their patterning (fit) in relation to the work context. He distinguished three broad categories of context—systematized (typically long-linked), discretionary (typically labor intensive), and developmental (typically team intensive). When the pattern fits the context, high performance (efficiency) results. Patterns, in appropriate contexts, will lead to effectiveness; violation of these patterns tends to be counterproductive. Such a view of effectiveness is advocated as providing not only for the assessment of current and estimated future effectiveness but also for diagnosis of possible sources of ineffectiveness. The proposed patterns are as follows:

	<u>Context</u>		
	<u>Systematized</u>	<u>Discretionary</u>	<u>Developmental</u>
Task variability	low	medium	high
Task difficulty	low-medium	low-high	medium-high
Structural dimensions			
Role specialization	high	medium	low-medium
Standardization	high	medium	low
Discretion	low-medium	low-high	medium-high
Expertise	low-medium	low-high	medium-high
Processes within units			
Work flow direction	sequential	pooled	reciprocal
Work flow frequency	high	medium	low
Direction of communication	vertical	vertical and horizontal	high
Frequency of communication	low	medium	high
Performance (efficiency)	high (long-linked)	high (labor-intensive)	high (team intensive)

Van de Ven, A. H., & Ferry, D. L. Measuring and assessing organizations.  
New York: Wiley-Interscience, 1979.

Effectiveness, in the context of organizational assessment, is goal attainment with the goals and attainment standards specified by the dominant coalition. Effectiveness is always a value judgement. The values of the dominant coalition usually have more impact on the organization than those of any other relevant constituency. Therefore, the values and judgements of the dominant coalition are the most fruitful source of information. The major concern of the book is to display an array of standardized procedures for assessing organizations.

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Weick, K. On repunctuating the problem of organizational effectiveness.  
In P. S. Goodman & J. M. Pennings (Eds.), New perspectives on organizational effectiveness. San Francisco: Jossey-Bass, 1977.

The effective organization is garrulous, clumsy, superstitious, hypocritical, monstrous, octopoid, wandering, and grouchy. These modifiers describe respectively how organizations communicate, how they combine activities, how they decide, how what they say is related to what they do, how deviant they are, how they are integrated, whether they are oriented to means (system view) or ends (goal approach), and how satisfied they are. This presentation constitutes a set of hypotheses about certain determinants of effectiveness.

Weick's central thesis may be that organizations act first and explain later. Thus, the specification of means and ends usually occurs as an interpretation of past behavior. Garrulousness is advantageous because, as the amount and kinds of communication increase, so do the chances that an organization or its members will devise useful explanations (useful in that using such explanations to guide future behaviors will result in desired or advantageous outcomes) of their past behaviors. Further, Weick asserts that a certain amount of random and irrational behavior is necessary to organizations. Being clumsy, superstitious, hypocritical, and monstrous allows organizations to break out of inappropriate behavior patterns that, if maintained, could lead to failure to adapt and could provide information to adversaries about the likely future actions of the organization. (See also Pondy on p. A-13.)

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Yuchtman, E., & Seashore, S. E. A system resource approach to organizational effectiveness. American Sociological Review, 1967, 32, 891-903.

The effectiveness of an organization depends on the relationship of the organization to its environment. The relationship, or bargaining position of the organization, is demonstrated by the organization's ability to acquire scarce and valued resources. Goals are defined as specifications of means or strategies for enhancing the system's

bargaining position. Competition from other systems for the resources is necessary for the assessment of effectiveness. Resources are means or facilities potentially controllable by organizations and potentially usable in exchange relationships of the organization with its environment. Characteristics of resources include liquidity, stability, relevance, universality, and substitutability. Optimal resource acquisition may not be equivalent to maximum resource acquisition, especially in a long-term view, due to risks of environmental depletion and/or eliciting environmental counter responses.

## PART II: EMPIRICAL RESOURCES

Larry H. Ford and Denise M. Rousseau

This inventory aims to provide a concise and convenient summary of selected empirical studies in which the concept "organizational effectiveness" is invoked. There are seventy-six entries. Aside from citation of the source, each entry contains an identification of the population studied, the conceptual and operational definitions of effectiveness employed, the key associated variables used to explicate effectiveness, the methods of measurement and analysis, and comments about any illuminating results obtained or suggested supplemental sources of information. The entries are in an inventory style, i.e. lists, categorical codes, and parsimonious descriptions. While some evaluative remarks appear, the emphasis is upon enumeration and characterization rather than upon evaluative judgements.

Four sources were tapped for information concerning available material on organizational effectiveness: (1) computerized bibliographic files, specifically PSYCH ABS, ERIC, and SOCIOLOGICAL ABS, maintained by Lockheed Information Systems, Palo Alto, California; (2) the recommendations of colleagues; (3) the reference lists and bibliographies of materials obtained through the first two sources; and (4) visual search of recent issues of 16 relevant journals.

The first stage of the search, the computerized bibliographies, yielded about 1,200 items of potential interest. Reading the abstracts of the items allowed reduction of the number to about 200 potentially appropriate entries. These articles, and those located in other ways, were all read in their entirety. The final inventory contains 76 entries, intended to represent the most significant, typical and diverse contributions to the area.

The major criterion for the inclusion of empirical material is that analysis occurred at the organizational, or in some cases work-group or departmental, level. That is, one or more of the variables examined had to address system-level performance, efficiency, output, adaptability or other conceptions of effectiveness as defined by the authors. Some of the studies emphasize a single criterion of effectiveness, or a few criteria, along with some determinants, predictors, or covariates. Other studies emphasize multiple performance criteria and seek to examine the structure of such criteria. Another guide used for the inclusion of empirical material was the uniqueness of the approach, either in terms of the conceptual contributions, the operationalization of concepts, or both. Many of the works included do not make direct reference to the term "effectiveness". However, if they treat system-level performance, along a variety of dimensions, in an interesting or unique manner, they are included for this reason.

Certain reports are purposely omitted for various reasons. The most common reason is that the effectiveness or performance measures were either conceptualized or operationalized (or both) at the individual level. Also, reports that added little incremental information, or had little uniqueness in concept or operation, are omitted. Some reports are so vague as to render interpretation impossible; these items, too, were excluded. Finally, there remains the category of unintended omissions; no doubt certain items either did not come to our attention or, if they did, proved inaccessible and uncitable.

This inventory is not a representative sample of the literature. Our intent was diversity; therefore, certain frequently used approaches receive no more attention than do unique approaches. Further, although we attempted a broad coverage, we make no claim to an exhaustive coverage.

The most notable characteristic of this body of literature is the absence of deliberate conceptual treatments of effectiveness. Although some entries deal explicitly with the theoretical derivation of measures of effectiveness, most do not even try and are content merely to use the term. Further, there appears to be a strong tendency to make use of conveniently available data rather than conceptually required data, and therefore to define effectiveness, both conceptually and operationally, by default or at best by implication. Also noteworthy is the tendency to neglect--even avoid--rigorous approaches to analysis: Scale reliabilities, for example, are rarely assessed, and there is an apparent emphasis on "fishing expeditions" in the search for relational significance. In sum, this is a not particularly well integrated body of literature, and (with some notable exceptions) it is deficient in its technical sophistication. An interpretive description of the literature as a whole appears elsewhere in this report.

The entries are arranged alphabetically by first author. Each entry includes some information under each of the following headings:

- Population
- Definition(s) of effectiveness
  - Conceptual
  - Operational
- Associated variables
- Methods
- Results
- Comments or further references

Allen, M. P., Panian, S. K., & Lotz, R. E. Managerial succession and organizational performance: A recalcitrant problem revisited *Administrative Science Quarterly*, 1979, 24, 167-180.

Population: Major league baseball teams, 934 team-seasons

Effectiveness:

Conceptual: Effectiveness is a more general concept than performance or goal attainment, although performance is a major factor in effectiveness.

Operational: Performance as the percent of games won; managerial succession as the number of new managers hired between the end of the prior season and the beginning of the current season; inside succession as new managers employed in any capacity by the team during the prior season; outside succession as new managers not affiliated with them in any capacity during the prior season; turnover as new starters among the eight fielders and five pitchers.

Associated Variables: None

Methods:

Level of data collection: Organizational (team-season)

Level of analysis: Organizational (team-season)

Source of data: Archives

Design: Path analytic

Results: Prior performance ( $P_{t-1}$ ) predicted 35 percent of the variance in current performance ( $P_t$ ). Succession ( $S_t$ ) added 1 percent in predictive power beyond prior performance; turnover ( $T_t$ ) added 2 percent.

Comments: See Grusky.

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Aram, J. D., Morgan, C. P., & Esbeck, E. S. Relationship of collaborative interpersonal relationships to individual satisfaction and organizational performance. *Administrative Science Quarterly*, 1971, 16, 289-296.

Population: 16 research and development groups in one organization, 110 individuals.

Effectiveness:

Conceptual: Not defined

Operational: Evaluations of individuals and groups by managers and technical council.

Associated Variables: Collaboration and consensus within groups as represented by support, communication, and risk taking; individual need satisfactions concerning professionalism, job conditions, and status.

Methods:

Level of data collection: Individual, group  
Level of analysis: Individual, group  
Source of data: Managers' ratings of individual performance,  
technical council's ratings of group performance.  
Design: Correlational

Results: Knowledge-based risk taking was related to individual need satisfaction and performance, not to group performance.

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Astin, A. W. An empirical characterization of higher educational institutions.  
Journal of Educational Psychology, 1962, 53, 224-234.

Population: 355 colleges and universities

Effectiveness:

Conceptual: None  
Operational: 33 variables measured, none offered as indicators of performance.

Associated Variables: None (see above)

Methods:

Level of data collection: Organizational  
Level of analysis: Organizational  
Source of data: School records  
Design: Correlational (factor analytic)

Results: Six factors were affluence, size, private vs. public control, masculinity (percent male students and ROTC), homogeneity of student major fields, and realistic (technical) emphasis.

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Bachman, J. G., Smith, C. G., & Slesinger, J. A. Control, performance, and satisfaction: An analysis of structural and empirical effects.  
Journal of Personality and Social Psychology, 1966, 4, 127-136.

Population: 36 branch offices of sales firm, about 23 agents per branch

Effectiveness:

Conceptual: Efficiency, coordination of effort, task performance, and satisfaction.  
Operational: Sales commissions of individuals, controlled for tenure; means of members' commission earnings for branches.

Associated Variables: Control over branch by salesmen; total control (manager + salesmen); interpersonal control by manager over salesmen, salesmen over manager, and total interpersonal control; and bases of managers' power, i.e., referent, expert, reward, coercive, or legitimate.

Methods:

Level of data collection: Individual

Level of analysis: Individual, branch

Source of data: Records for commissions, questionnaires for other variables.

Design: Correlational

Results: Branch performance was positively related to salesmen control, total control, and managers' interpersonal control and referent and expert power. Branch performance was negatively related to managers' reward power. Individual performance displayed the same relationships as group performance.

Comments: For instance of cross-level analysis, see Tripathi

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Becker, S. W., & Stafford, F. Some determinants of organizational success. Journal of Business, 1967, 40, 511-518.

Population: 62 savings and loan branches, 284 individuals

Effectiveness:

Conceptual: Not defined, refers to efficiency

Operational: Percent growth in assets and surplus over a three-year period.

Associated Variables: Size of the branch, rate of community growth, rate of innovation, and leadership style (Fiedler).

Methods:

Level of data collection: Individual, branch

Level of analysis: Branch

Source of data: Archives, questionnaire measures from managers for leadership style and rate of innovation.

Design: Multiple regression

Results: Only rate of community growth was a significant predictor of growth in assets and surplus.

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Berk, B. B. Staff stability and organizational effectiveness. Pacific Sociological Review, 1977, 20, 349-370.

Population: 40 psychiatric wards

Effectiveness:

Conceptual: Implicit goal approach

Operational: Frequency of reported patient incidents, discharge rates, average length of stay, rate of rehospitalization within 2.5 years.

Associated Variables: Staff stability as turnover rates of ward physicians and charge nurses.

Methods:

Level of data collection: Ward

Level of analysis: Ward

Source of data: Ward records

Method: Correlational

Results: Wards with low physician turnover had medium incident rates and short length of stay; wards with medium physician turnover had high incident rates and short length of stay; wards with high physician turnover had low incident rates and longer length of stay. Discharge and rehospitalization rates were the same for all levels of physician turnover. Charge nurse turnover was positively related to incident rate. Ward size was negatively related to physician turnover and incident rate.

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Bidwell, C. E., & Kasarda, J. D. School district organization and student achievement. American Sociological Review, 1975, 40, 55-70.

Population: 104 school districts

Effectiveness:

Conceptual: Effectiveness in terms of output is a function of the external environment (inputs) and the internal environment (transformation, structure, processes).

Operational: Standardized reading and math achievement levels of students.

Associated Variables: Pupil/teacher ratios, administrator/teacher ratios, percent of nonwhite students, percent of teachers holding M.A.s, size of district, financial resources, percent of economically disadvantaged students, percent of parent population with four years of high school.

Methods:

Level of data collection: Organizational, individual

Level of analysis: Organizational (district level)

Source of data: Archives

Design: Correlational (multiple regression)

Results: Pupil/teacher ratio, administrator/teacher ratio, and percent of nonwhite students all had significant negative betas predicting to math and reading scores. Percent of teachers with M.A.s had a significant beta predicting to reading scores only. Size, financial resources, and percent of parent population with four years of high school had indirect effects through pupil/teacher and administrator/teacher ratios and the percent of teachers holding M.A.s. Other variables had non-significant betas.

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Bowers, D. G. Organizational control in an insurance agency. Sociometry, 1963, 27, 230-244.

Population: 40 insurance company branches

Effectiveness:

Conceptual: Task performance and member satisfaction

Operational: Company officials evaluating overall rank of branches, archival performance measures including agency development, business growth, business costs, business volume, and turnover. Agency development is represented by developing younger people and emphasizing high equity sales. Agent satisfaction.

Associated Variables: Agent perceptions of control exercised by various organizational levels.

Methods:

Level of data collection: Individual, branch

Level of analysis: Branch

Source of data: High-level managers for branch ranks, archived data, and surveys of members for perceptions of control and satisfaction.

Design: Correlational

Results: Agents' perceptions of total control was negatively related to agency development and business costs and was positively related to satisfaction with company, managers, job, income, and fellow agents. Branch ranking was positively related to total control attributed to regional manager by agents, satisfaction with regional manager and fellow agents, and business volume; it was negatively related to business costs. Amount of control attributed to various levels by agents was negatively related to performance measures and positively related to satisfaction.

Comments: See Seashore & Yuchtman; and Bowers & Seashore, for further treatment of related data.

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Bowers, D. G., & Seashore, S. E. Predicting organizational effectiveness with a four-factor theory of leadership. Administrative Science Quarterly, 1966, 11, 238-263.

Population: 40 insurance company branches

Effectiveness:

Conceptual: Task performance and member satisfaction

Operational: Company records of performance, questionnaire measures of member satisfaction.

Associated Variables: Questionnaire measures of leadership practices

Methods:

Level of data collection: Individual, branch

Level of analysis: Branch

Source of data: Branch records and questionnaires of members

Design: Correlational

Results: Peer leadership support was positively related to satisfaction with fellow agents, job, and manager. Peer leadership goal emphasis was positively related to satisfaction with fellow agents, company, income, and manager. Peer leadership work facilitation was positively related to satisfaction with company, fellow agents, income, and manager. Manager leadership facets were generally related to satisfaction facets. Peer and manager leadership support were not related to any performance measures. Other leadership measures were positively related to performance factor I (high average premium, lower sales frequency, and profit from previous sales). Business costs were negatively related to peer leadership. Peer and manager leadership measures were positively related.

Comments: See Bowers; and Seashore & Yuchtman

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Cameron, K. Measuring organizational effectiveness in institutions of higher education. Administrative Science Quarterly, 1978, 23, 606-632.

Population: 6 universities, 190 administrators

Effectiveness:

Conceptual: Effectiveness is a multiple-criteria process variable with both internal and external characteristics.

Operational: Defined by objective measures of criterion constructs and "validated" by administrators and faculty members. Student satisfaction--attrition and counseling center visits. Student academic development--percent going to graduate school, number of library books checked out, percent of alumni with graduate degrees. Student career development--number of students in work-study programs, number of students getting career counseling. Student personal development--number of extracurricular activities, number of students in extra- or intramural sports, number of students in student government. Faculty/administrator satisfaction--turnover, percent of faculty on policy-making boards. Professional development and quality of faculty--percent earning degree after hiring, percent of budget for professional development, number of new courses taught, percent of faculty with Ph.D.s. System openness and community interaction--number of continuing education courses, number of conferences for nonstudents, percent of students with outside jobs. Ability to acquire resources--general funds, previously tenured faculty hired, average student high school rank, number of transfer students, and number of outside scholarships. Organizational health--questionnaire measures of administrators.

Associated Variables: None

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: School records and questionnaires of administrators

Methods: Correlational

Results: There were nine dimensions to the effectiveness criteria listed under the operational definition of effectiveness. Reliability of each scale was greater than 0.6 (alpha), with discriminant validity except for student satisfaction and organizational health. Institutions did differ significantly on the dimensions. There were no differences among different jobs (general, academic, financial, students affairs administrators, and department heads) on survey measures of the nine effectiveness dimensions. For student academic development, student personal development, professional development and quality of faculty, and ability to acquire resources, the questionnaire and objective measures were positively related.

Comment: A rare instance in which effectiveness scales are tested for both reliability and validity.

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Comrey, A. L., High, W., & Wilson, R. C. Factors influencing organizational effectiveness VI. A survey of aircraft workers. Personnel Psychology, 1955, 8, 79-99.

Population: 29 production departments in an aircraft manufacturing firm

Effectiveness:

Conceptual: Not treated

Operational: Amount of time spent on rework, percent of unacceptable units produced, production to time standard, and ratings of overall effectiveness of units.

Associated Variables: Survey measures of worker-perceived characteristics of supervisor, including consistency, judgement, competence, helpfulness, organizing, planning, safety enforcement, communication, lack of arbitrariness, social nearness; worker perceptions of group unity, and reported pride in work group.

Methods:

Level of data collection: Individual, department

Level of analysis: Department

Source of data: Company records, survey of workers, and rating by staff executives.

Design: Correlational

Results: Work-to-rework ratio was positively related to consistency, judgement, competence, helpfulness, organizing, planning, pride in work groups, and safety enforcement of supervisor. Percent of unacceptable units produced was related to competence and planning of supervisor. Production to time standard was related to communication, judgement, group unity, lack of arbitrariness, safety enforcement, and social nearness of supervisor. Overall ratings of effectiveness were not related to anything.

Comments: For further treatment of the same population and measures see, also, Comrey, A. L., High, W. S., & Wilson, R. C. Factors influencing organizational effectiveness VII. A survey of aircraft supervisors. Personnel Psychology, 1955, 8, 245-257. Also,

High, W. S., Wilson, R. C., & Comrey, A. L. Factors influencing organizational effectiveness VIII. A survey of aircraft foremen. Personnel Psychology, 1955, 8, 355-368.

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Comrey, A. L., Pfiffner, J. M., & Beem, H. P. Factors influencing organizational effectiveness I. The U.S. forest survey. Personnel Psychology, 1952, 5, 307-328.

Population: 18 U.S. Forest Service field units, 413 people

Effectiveness:

Conceptual: Not treated

Operational: Ratings of overall effectiveness

Associated Variables: Tenure of forest supervisors, attitude towards management, first-level supervisors' perceptions of information sharing, participation, social nearness, and empathy of second-level supervisors; technical staff perceptions of formalization and conference practices.

Methods:

Level of data collection: Individual, forest field units

Level of analysis: Forest field units

Source of data: Surveys, regional office forest inspectors (overall ratings).

Design: Correlational

Results: Overall rating of unit effectiveness was positively related to forest supervisor tenure, supervisors' critical attitude toward management, first-level supervisors' perceptions of information sharing, participation, social nearness of second-level supervisor, and the second-level supervisors' tenure. The rating was also related to technical staff perceptions of formalization, dissension, and supervisor and the district rangers' perceptions of formalization and conference practices.

Comments: For further treatment of the same population and measures, see also Comrey, A. L., Pfiffner, J. M., & High, W. Factors influencing organizational effectiveness V. A survey of district rangers. Personnel Psychology, 1954, 7, 533-547.

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Comrey, A. L., Pfiffner, J. M., & Beem, H. P. Factors influencing organizational effectiveness II. The Department of Employment survey. Personnel Psychology, 1953, 6, 65-79.

Population: 30 offices of a government agency, about 130 people

Effectiveness:

Conceptual: Not treated

Operational: Ratings of overall effectiveness

Associated Variables: Managers' tenure and attitudes towards management and subordinates; assistant managers' pride in work group.

Methods:

Level of data collection: Individual, office

Level of analysis: Office

Source of data: Surveys of office members, ratings from managers' immediate superiors.

Design: Correlational

Results: No relationship between effectiveness rating and managers' tenure, attitude toward management, or attitude toward subordinates. Rating was positively related to assistant managers' pride in work group.

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Coulter, P. B. Organizational effectiveness in the public sector: The example of municipal fire protection. Administrative Science Quarterly, 1979, 24, 65-81.

Population: 324 municipal fire departments

Effectiveness:

Conceptual: Achieving goals that have been defined externally by, for example, community, society, or a specific clientele.

Operational: Fire prevention effectiveness in incidents per 1,000 population; fire suppression effectiveness is the dollar amount of property loss per capita; and productivity is the total cost as property loss plus fire service expenditure per capita.

Associated Variables: Environmental variables included land area, housing deterioration, crowding, precipitation, wind, thunderstorms, cold weather, industrialism, density, total population, water supply, property values, city government, social class, institutionalized population, and number of fire alarms. Organizational variables were status of fire chief, unionism, number of full-time paid employees, maximum response time, emergency response versatility, education incentive, rescue and medical services offered, constant manning, mutual aid calls responded to, administrative size, fire service planning, building inspector training and education, inspection program, inspection staff size, inspection by fire fighters, and number of alarms answered in contract area.

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: Public records, surveys of fire departments, building inspection departments, and city managers.

Design: Cross-sectional using discriminant function analysis

Results: Expenditure level was discriminated by unionism, contract alarms, precipitation, constant manning, land area, cold days, status of fire chief, density, social class, local alarms, institutionalized population, number of paid fire fighters, emergency rescue and medical services, and crowding. Prevention effectiveness levels were discriminated by cold climate, social class, building inspector training, full-time paid fire department personnel, land area, requirements for education and training of building inspectors, inspection program, fire fighters inspections, fire safety planning, and city manager government. Suppression effectiveness levels were discriminated by further education incentive, constant manning, land area, thunderstorms, maximum response time, fire service planning, population, number of full-time fire fighters, housing deterioration, and water supply. Productivity levels were discriminated by emergency response versatility, fire service planning, social class, maximum response time, status of fire chief, constant manning, inspection program comprehensiveness, land area, administrative staff size, institutionalized population, educational incentive, mutual aid responses, and emergency medical and rescue services. (Levels of expenditure, effectiveness measures, and productivity are all quartiles.)

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Ellsworth, R. B., Dickman, H. R., & Maroney, R. J. Characteristics of productive and unproductive unit systems in VA psychiatric hospitals. Hospital and Community Psychiatry, 1972, 23, 261-268.

Population: 39 VA psychiatric hospitals

Effectiveness:

Conceptual: Not defined, productivity and efficiency

Operational: Turnover in patients, reduction in long-term (two years or more) patient load.

Associated Variables: Size, staffing patterns, interunit competition, rate of special placement of patients, classification of units (as psychiatric or not), ratio of social workers to patients, and presence of applied research.

Methods:

Level of data collection: Unit, hospital

Level of analysis: Hospital

Source of data: Hospital records, interviews with employees

Design: Correlational

Results: Patient turnover and reduction in long-term patient load were controlled using a six-year baseline. Hospital size was negatively related to patient turnover. Interunit competition and rate of special placement were positively related to turnover. Reduction in long-term patient load was positively related to special placement rate. When the ten most and least productive hospitals (in terms of turnover and reduction in long-term patients) were compared, productive hospitals used special placements more, did applied research, were smaller, had more unclassified units, and had a higher ratio of social workers to patients.

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Evan, W. M. Conflict and performance in R & D organizations. Industrial Management Review, 1965, 7, 37-46.

Population: 64 government and industry research and development groups with 355 people.

Effectiveness:

Conceptual: Not explicit; output or task performance

Operational: Ratings of the performance of research groups; number of articles and patients.

Associated Variables: Survey measures of conflict, both personal and technical, and group loyalty.

Methods:

Level of data collection: Individual, group

Level of analysis: Group

Source of data: First- and second-level supervisors for performance ratings, surveys of group members for measures of conflict and loyalty.

Design: Correlational

Results: Reliabilities of ratings were low (tau's of .14-.43). Correlations between composite productivity index and conflict were generally low ( $r$ 's less than .14) except for interpersonal conflict in government groups ( $r = -.38$ ). For groups with low loyalty, interpersonal conflict between superiors and subordinates was negatively related to productivity. For groups with high loyalty, interpersonal conflict among peers was negatively related to productivity for government groups only. There were no significant relationships for groups with five or more members. For groups with less than five members, interpersonal conflict among peers in government groups was negatively related to productivity. In industrial groups with less than five members, superior-subordinate conflict was negatively related to productivity. Patents and publications were not used in analyses.

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Friedlander, F., & Pickle, H. Components of effectiveness in small organizations. Administrative Science Quarterly, 1968, 13, 289-304.

Population: 97 small business

Effectiveness:

Conceptual: The survival and growth of the organization and the fulfillment of societal or environmental needs.

Operational: Community fulfillment--involvement in community organizations; government fulfillment--compliance with implicit and explicit demands; customer fulfillment--quality of product or service; supplier fulfillment--payment, overall quality as a customer; creditor fulfillment--rating from Dun & Bradstreet; owner fulfillment--financial return; employee fulfillment--satisfaction with job.

Associated Variables: Organizational size

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: Owners for owner, government, and community fulfillment; surveys of the other constituencies directly.

Design: Correlational

Results: Community fulfillment was positively related to employee fulfillment, owner fulfillment, and organizational size. Government fulfillment was negatively related to customer fulfillment and positively related to creditor fulfillment. Customer fulfillment was positively related to supplier fulfillment, owner fulfillment, employee fulfillment, and size. Owner fulfillment was positively related to size.

Comments: One of the earliest examples of a study dealing with constituencies. See also Pickle, H., & Friedlander, F. Seven societal criteria of organizational success. Personnel Psychology, 1967, 20, 165-178.

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Friedlander, F. Performance and interactional dimensions of organizational work groups. Journal of Applied Psychology, 1966, 50, 257-265.

Population: 12 military research and development groups

Effectiveness:

Conceptual: Not defined, task performance

Operational: Survey responses to questions concerning group problem solving.

Associated Variables: Mean group occupational level, educational heterogeneity, size, group hierarchical level in larger organizations, survey measures of mutual influence, personal involvement and participation, trust, leader control, and role and idea conformity.

Methods:

Level of data collection: Individual

Level of analysis: Group

Source of data: Surveys of group members

Design: Factor analytic

Results: Of the nine major dimensions of group phenomena extracted, the largest (33 percent of the variance) was group effectiveness. This factor was negatively related to group mean occupational level, educational heterogeneity, size, and group hierarchical level. The effectiveness dimension was distinct from dimensions of mutual influence, personal involvement, trust, leader control, and conformity.

Comments: See also Friedlander, F. The impact of organizational training laboratories upon the effectiveness and interaction of ongoing work groups. Personnel Psychology, 1967, 20, 289-307.

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Georgopoulos, B. S., Indik, B. P., & Seashore, S. E. Some models of organizational effectiveness. Ann Arbor: Institute for Social Research, The University of Michigan, 1960.

Population: 32 stations in one company, 1,200 people

Effectiveness:

Conceptual: Three models are offered: Model 1--the extent to which an organization is accomplishing its major objectives without jeopardizing its integrity and without placing its members under undue strain, solving its ongoing problems; Model 2--optimization, over a suitable span of time, system output, providing for the performance of all duties prescribed by the operating plan; Model 3--a description of the domain of organizational effectiveness, a factor analytic approach.

Operational: In Model 1, the first-order criteria consisted of productivity to time standards (average per station and the proportion of work days during which standard was exceeded by a specified criterion) and overall rating of effectiveness. Second-order criteria consisted of survey measures of flexibility, coordination, intra-organizational strain and pressures on members. Third-order criteria consisted of survey measures of communication, the nature of supervision, distribution of influence, the nature of rewards, cohesiveness, morale, intention to stay, accidents, and absenteeism. In Model 2, the first-order criterion is rated effectiveness. Second-order criteria consist of absenteeism, accidents,

productivity, and perceived flexibility. Third-order criteria were selected a priori, based on previous research, to be determinants (or at least related to) the various second-order criteria. In Model 3, the first-order criterion was rated effectiveness. All other variables were factor analyzed as dimensions of effectiveness.

Associated Variables: None

Methods:

Level of data collection: Individual, station

Level of analysis: Station

Source of data: Station records, higher management (ratings) and surveys of members

Design: Correlational, factor analytic

Results: For Model 1, all first- and second-order criteria are appropriately related. Half the third-order criteria are related to all second-order criteria. Only two (absences and intention to stay) are not related to any second-order criteria. For Model 2, three of five second-order criteria are related to the station rating (error rate, productivity, and flexibility); absenteeism and accidents are not. Relevant third-order criteria are generally related to the appropriate second-order criteria. For Model 3, there are seven independent factors: (1) relationship between members and organization concerning performance, (2) influence on organizational operations, (3) group cohesiveness, (4) career patterns of members, (5) congruence between prevailing and desired influence over organizational operations, (6) attitude towards company, and (7) job commitment. Station rating is related to Factors 1 and 7. The multiple R between the rating and the seven factors is 0.66.

Comments: See also Georgopoulos & Tannenbaum.

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Georgopoulos, B. S., & Tannenbaum, A. S. A study of organizational effectiveness. American Sociological Review, 1957, 22, 534-540.

Population: 32 stations within one organization

Effectiveness:

Conceptual: "The extent to which an organization as a social system, given certain resources and means, fulfills its objectives without placing undue strain upon its members".

Operational: Station productivity as the average performance to production standards of members, questionnaire measures of intraorganizational strain and flexibility, ratings of overall station effectiveness.

Associated Variables: None

Methods:

Level of data collection: Individual, station

Level of analysis: Station

Source of data: Company records for performance, questionnaires from members for strain and flexibility, high-level managers for ratings.

Design: Correlational

Results: The effectiveness rating was positively related to station productivity. Intergroup strain was negatively related to effectiveness and productivity. Between-station variances were greater than within-station variances, indicating that the criteria were station-level.

Comments: See also Georgopoulos, Indik, & Seashore

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Grinyer, P. H., & Norburn, D. Planning for existing markets: Perceptions of executives and financial performance. Journal of the Royal Statistical Society--Series A, 1975, 138, 70-97.

Population: 21 companies, 91 executives, a stratified random sample drawn from a sampling frame of 71 companies included in the frame based on potential access and range of profitability.

Effectiveness:

Conceptual: Although effectiveness per se is not dealt with, there seems to be an implicit goal approach, assuming that one goal for organizations is maximizing financial performance. Further, the issues of adaptation and purposeful planning and decision making are discussed. The central theme seems to be that formal planning combined with adequate information leads to goal attainment of financial performance.

Operational: Financial performance was measured as the return on net assets. Return on net assets was calculated as the ratio of profits before interest and tax to fixed assets plus current assets minus current liabilities.

Associated Variables: Perceptions of actual and ideal objectives, number of decisions on which consensus as to responsible decision maker was reached, number of formal and informal planning procedures, number of formal and informal information channels, number of items of information received, number of items of information used, the extent of common perceptions about information received, information used, organizational objectives, ideal objectives, ideal information, and desire for change in information availability and use.

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: Interviews with executives, company and public records

Design: Correlational, factor analytic

Results: Only the measure of general desire for change in information available for use was significantly related to financial performance. The relationship was negative. Factor analysis yielded ten independent factors: (1) common perception of the use of more information, (2) clarity of role perception, (3) common perception of a high number of items of information used in review, (4) information received and consensus about information received, (5) ratio of ideal to actual objectives, (6) financial performance, number of informal information channels, and a general desire for change in the information used in review, (7) perceptions of objectives, (8) desire for change in objective influence, (9) individual desire for change in information used, and (10) an uninterpretable factor.

Comments: Note relevance to information and decision-making models of effectiveness. Apparently, if an organization is not doing well financially, the executives feel that they should change the information on which they base decisions.

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Grusky, O. Managerial succession and organizational effectiveness.

American Journal of Sociology, 1963-64, 69, 21-31.

Population: 16 major league baseball teams

Effectiveness:

Conceptual: Performance

Operational: Team standings

Associated Variables: Clientele support (game attendance), managerial succession.

Methods:

Level of data collection: Organizational

Level of analysis: Organizational

Source of data: Archives

Design: Correlational

Results: The rate of managerial succession was negatively related to team standings for two time periods, 1921-41 and 1951-58. Clientele support was positively related to team standing.

Comments: See Allen, Pannian, and Lotz

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Hall, D. T., & Lawler, E. E. Job characteristics and the organizational integration of professionals. Administrative Science Quarterly, 1970, 15, 271-281.

Population: 22 research and development units

Effectiveness:

Conceptual: Performance

Operational: Performance ratings by directors; composite objective performance measure consisting of net change in R & D budget, number of new contracts, number of new internally funded projects, percent of projects meeting deadlines, and percent of projects meeting budgets.

Associated Variables: Member perceptions of direct customer responsibility, financial pressure, and quality pressure.

Methods:

Level of data collection: Individual, unit

Level of analysis: Unit

Source of data: Records, directors for ratings, questionnaire to members.

Design: Correlational

Results: Both performance ratings and the objective performance index were related to perceived pressure for quality.

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Indik, B. P., Georgopoulos, B. S., & Seashore, S. E. Superior-subordinate relationships and performance. Personnel Psychology, 1961, 14, 357-374.

Population: 27 stations in one delivery firm, 975 people

Effectiveness:

Conceptual: Station performance

Operational: Station performance as the mean performance to productivity standard of station members, rating of overall station effectiveness.

Associated Variables: Member perceptions of openness of communication, member satisfaction with supervisor, degree of consensus about station operation, and distribution of influence over station operations; individual effectiveness ratings by supervisor.

Methods:

Level of data collection: Individual, station

Level of analysis: Individual, station

Source of data: Higher-level manager for station ratings, supervisor for individual ratings, company records, questionnaires to members.

Design: Correlational

Results: Individual performance, both rated and "objective", were positively related to openness of communication for individuals and groups; productivity measures had lower positive relationships. Satisfaction with supervisor was positively related to effectiveness and productivity for individuals. Degree of consensus was positively related to group effectiveness and productivity, with a weaker relationship to individual productivity and effectiveness. Perceived influence over station operation was positively related to station effectiveness and productivity, with a weaker relationship to individual effectiveness and productivity.

Comments: See also Georgopoulos et al., and Georgopoulos & Tannenbaum.

Note differences in strength of relationships as levels of analysis change, while sign and statistical significance remain similar.

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Ivancevich, J. M., & Donnelly, J. H. Leader influence and performance.

Personnel Psychology, 1970, 23, 539-549.

Population: 31 sales branches of an organization, 394 people

Effectiveness:

Conceptual: Not explicit; performance, efficiency, and "system health"

Operational: Performance measured as market penetration (total sales/potential sales), and number and size of orders; efficiency measured as number of orders taken per number of calls made, selling costs (commissions + expenses/total sales volume) and route density (miles traveled per calls made).

Associated Variables: Questionnaire measures of incremental influence (group means for members' referent and expert power) and types of power using French & Raven's typology; absenteeism and turnover.

Methods:

Level of data collection: Individual, branch

Level of analysis: Branch

Source of data: Records for performance, efficiency, absenteeism and turnover; questionnaires of members for measures of power and influence.

Design: Correlational

Results: Incremental influence was positively related to performance measures and negatively related to absenteeism. Referent power had more positive relationships with performance and efficiency measures than did other types of power.

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Kavcic, B., Rus, V., & Tannenbaum, A. S. Control, participation, and effectiveness in four Yugoslav industrial organizations. Administrative Science Quarterly, 1971, 16, 74-87.

Population: 4 manufacturing organizations, 150 people

Effectiveness:

Conceptual: Not explicit, a multiple-criteria approach including productivity, economic success, and social relations.

Operational: Expert rankings of the organizations on the criteria

Associated Variables: Measures of worker-perceived control at various hierarchical levels and of participation.

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: Officials of the Trade Union Council (rankings), questionnaires from members for control and participation measures.

Design: Comparison of cases

Results: Shapes of the actual and ideal control graphs were similar to all four organizations; participation was somewhat higher for the more effective plants.

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Kimberly, J. R. Hospital adoption of innovation: The role of integration into external informational environments. Journal of Health and Social Behavior, 1978, 19, 361-373.

Population: 489 hospitals

Effectiveness:

Conceptual: Not defined, innovation as the adoption of new technologies and procedures.

Operational: Number of innovations purchased by hospital (devices for respiratory therapy identified by experts as innovations).

Associated Variables: Number of paid outside speakers brought in by hospital, staff M.D. publications in the area of respiratory disease, hospital reimbursement for M.D. travel to conventions, existence of a formally differentiated respiratory therapy unit, and hospital size as the number of beds.

Methods:

Level of data collection: Organizational  
Level of analysis: Organizational  
Source of data: Hospital records  
Design: Correlational

Results: With the exception of hospital size, the above associated variables were all significantly related to the number of innovations purchased.

Comments: Effectiveness is not treated implicitly or explicitly; the interest in this work is predicated on the assumption that innovation is a correlate, or perhaps a component, of effectiveness.

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Kimberly, J. R., & Nielsen, W. R. Organization development and change in organizational performance. Administrative Science Quarterly, 1975, 20, 191-206.

Population: 1 manufacturing organization, 90 people

Effectiveness:

Conceptual: Not explicitly defined, productivity, quality control, and organizational climate.  
Operational: Units produced, un'ts rejected, questionnaire measures of trust, support, open communications, understanding of objectives, conflict resolution, resource utilization, and autonomy.

Associated Variables: None

Methods:

Level of data collection: Individual, organizational  
Level of analysis: Organizational  
Source of data: Company records, questionnaires to members  
Design: Longitudinal (one year) case study

Results: After an OD intervention, responses to questionnaire measures and production quality (as the variance in the rate of units rejected) improved; production rate did not.

King, J. A., & Smith, C. G. The treatment milieu and prediction of mental hospital effectiveness. Journal of Health and Social Behavior, 1972, 13, 180-194.

Population: 18 mental hospitals, stratified random sample of 220 state hospitals.

Effectiveness:

Conceptual: Not defined, implicit goal approach

Operational: Questionnaire measures of staff satisfaction and quality of care; net release rate as  $[(\text{admissions} + \text{readmissions}) - (\text{discharges} + \text{leaves})]/[(\text{residents} + \text{transfers in}) - (\text{deaths} + \text{transfers out})]$ ; rehabilitation success measure from survey of patients' "significant others".

Associated Variables: Measures of the characteristics of the treatment environment, including active treatment, socio-emotional activity, patient self-management, behavior modification, and instrumental activity.

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: Hospital records, staff members, patients' significant others.

Design: Factor analytic (for scale building), correlational

Results: Rated overall quality of care is positively related to socio-emotional activity and negatively related to patient self-management. Net release rate is positively related to socio-emotional activity.

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Kirchoff, B. A. An assessment of global evaluation of organizational effectiveness. Paper presented at the Academy of Management, Kissimmee, Florida, August 1977.

Population: 31 geographically separate profit centers in one large corporation, each carrying out similar functions.

Effectiveness:

Conceptual: A hybrid goal attainment/natural systems model, "whether the organization wins or loses (and) how well it plays the game".

Operational: Paired comparison ratings of the centers on overall performance; achievement of explicit goals as productivity, return on investment, and accident rate; the extent of use of MBO and the consideration and initiating structure behaviors using the Leader Behavior Description Questionnaire on subordinate managers.

Associated Variables: None

Methods:

Level of data collection: Individual, profit center

Level of analysis: Profit center

Source of data: president and vice-presidents for overall ratings; profit center managers for questionnaire measures; company records for explicit goal attainment.

Design: Multiple regression, correlational

Results: Global evaluation correlates most strongly with return on investment and productivity; it is negatively related to accident frequency. Initiating structure leadership is positively related to accident frequency and consideration leadership, and negatively related to productivity and use of goals (MBO). Consideration is negatively related to goal use; goal use is negatively related to accident frequency. The global evaluation regressed on the above variables was significantly predicted by return on investment, productivity, accident frequency, and initiating structure leadership.

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Lawrence, P. R., & Lorsch, J. W. Differentiation and integration in complex organizations. Administrative Science Quarterly, 1967, 12, 1-47.

Population: 6 manufacturing organizations

Effectiveness:

Conceptual: Not explicit, performance, coping with the environment, achieving "primary task".

Operational: Financial indices of performance; chief executive's perception of the organization's attainment as percent of ideal performance.

Associated Variables: Differentiation as the differences among subsystems on four system attributes--structure, interpersonal orientation, time orientation, and goal orientation; integration as survey measures of interdepartmental relations.

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: Company records, chief executives, members

Design: Correlational

Results: More effective organizations (based on financial indices and chief executives' perceptions) had more differentiation and integration.

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Lieberson, S., & O'Connor, J. F. Leadership and organizational performance: A study of large corporations. American Sociological Review, 1973, 37, 117-130.

Population: 167 organizations in 13 industries

Effectiveness:

Conceptual: Not defined, financial performance

Operational: Sales, net earnings, and profit margins in absolute terms

Associated Variables: Change in leadership as the selection of a new president or chairman of the board; year, industry; organizational characteristics including size, dependency on production workers, degree of machine technology, orientation of markets, industry growth, importance of scientific and engineering activities, concentration, orientation of the organization to the consumer, and average number of vice presidents.

Methods:

Level of data collection: Organizational

Level of analysis: Organizational, industrial

Source of data: Public information

Design: Longitudinal (20 years), correlational

Results: Administration effects (changes in leadership) account for significant portions of variance in financial indices beyond the effects of year, industry, and company. The effects of changes in leadership differ across industries.

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Linn, L. Measuring the effectiveness of mental hospitals. Hospital and Community Psychiatry, 1970, 21, 381-386.

Population: 12 state mental hospitals

Effectiveness:

Conceptual: Providing a therapeutic milieu, an implicit goal approach

Operational: Patient release rate as average length of patient stay

Associated Variables: Indicators of providing a therapeutic milieu, in addition to release rate, included the following: (1) size as the number of beds; (2) average ward size as the number of patients per ward; (3) the ratio of nurses to patients; (4) the ratio of attendants to patients; (5) average time physicians spent on wards per day; (6) frequency of staff-patient interactions; (7) ward decor; (8) ward facilities (private vs. shared lockers and closets); (9) open-door policy as the percent of time during the day that the door is left open; (10) percent of patients who could leave unescorted; (11) smoking restrictions; (12) percent of patients receiving therapy at least once a week; (13) percent of patients working; and (14) percent of poorly groomed patients.

Methods:

Level of data collection: Organizational, ward

Level of analysis: Organizational

Source of data: Hospital records, interviews with charge nurses, researcher observations.

Design: Correlational, cluster analytic

Results: Release rate was significantly related to hospital size, attendants per patient, physicians' time on ward, percent of patients receiving therapy, and staff-patient interaction. Cluster analysis disclosed two clusters. Cluster 1 included release rate and items 1, 3, 4, 5, 6, and 12; cluster 2 included items 7, 8, 9, 10, and 14.

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Lodahl, T. M., & Porter, L. W. Psychometric score patterns, social characteristics, and productivity of small industrial work groups. Journal of Applied Psychology, 1961, 45, 73-79.

Population: 62 work groups within one commercial airline

Effectiveness:

Conceptual: Not explicit, productivity

Operational: Mean percent achievement by individuals of time standards, standardized within work centers to account for differences due to different types of work.

Associated Variables: Questionnaire measures of "Supervisory Abilities" and "Decision Making Approaches" (from Ghiselli's Self-description Inventory) and of group cohesiveness and leader popularity; supervisor ratings of need for within-group cooperation.

Methods:

Level of data collection: Individual, group

Level of analysis: Group

Source of data: Company records, group members, group supervisors

Design: Correlational

Results: In groups with high need for cooperation, productivity was positively related to cohesiveness and leader popularity and negatively related to Supervisory Abilities scale variance. Relationships for groups with low and medium need for cooperation were all nonsignificant.

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McMahon, J. T. Management control structures and organizational effectiveness.  
Proceedings of the 11th annual meeting of the Eastern Academy of Management, 1972, 1, 162-165.

Population: All management (2,537) in 10 geographically dispersed plants in one manufacturing organization; a sample of 1,333 employees.

Effectiveness:

Conceptual: Not explicitly defined, performance and member satisfaction.

Operational: Employee satisfaction with company, top management, interdepartment cooperation, autonomy, performance of company, work pressure, teamwork, job satisfaction, information, and immediate manager's communication.

Associated Variables: Managerial perceptions of control possessed by top, middle, and lower levels of management.

Methods:

Level of data collection: Individual, plant, organizational

Level of analysis: Plant

Source of data: Managers, employees

Design: Correlational using analysis of variance

Results: Low total control was associated with high interdepartment cooperation and job satisfaction; concordance (agreement of assessment of control by different levels) was associated with satisfaction and performance.

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Mahoney, T. A. Managerial perceptions of organizational effectiveness.  
Management Science, 1967, 14, B76-91.

Population: 84 managers from 13 firms; 283 subordinate organizations that were the responsibility of the managers.

Effectiveness:

Conceptual: Goal attainment

Operational: Based on a survey of literature, the author determined 114 organizational characteristics proposed as indicators of effectiveness; an overall rating of effectiveness, undefined, was also obtained.

Associated Variables: None

Methods:

Level of data collection: The subordinate organizations for which each manager was responsible.

Level of analysis: The subordinate organizations

Source of data: Managers

Design: Factor analytic, multiple regression

Results: The 114 organizational characteristics, when factor analyzed, yielded 24 dimensions: flexibility, personnel development, cohesion, democratic supervision, reliability, selectivity of hiring, diversity of jobs and personnel, delegation of authority, bargaining with other organizations, results emphasis, staffing flexibility, coordination of activities, decentralization, understanding of policies and goals, conflict, personnel planning, supervisory support of subordinates, planning of operations, cooperation, efficient performance--mutual support and respect of supervisors and subordinates--and utilization of skills and abilities, communication, turnover, initiation of improvements, and supervisory control

Cluster analysis showed three groups of managers that, when the overall effectiveness rating was regressed on the dimensions of organizational characteristics, showed different models of perceptions of effectiveness. The first cluster gave planning the most weight, with performance, initiation, and development weighted equally. The second cluster gave performance the most weight, then development, and then planning. The third cluster gave most weight to planning and then to performance and reliability.

Comments: See also three other reports of similar conceptual and operational nature. Mahoney, T.A., & Frost, P. J. The role of technology in models of organizational effectiveness. Proceedings of the 32nd annual meeting of the Academy of Management, 1972, 1, 75-77. Technology was found to mediate the relationships between rated overall effectiveness and sub-criteria of effectiveness.

Mahoney, T. A., & Weitzel, W. Managerial models of organizational effectiveness. Administrative Science Quarterly, 1969, 14, 357-365. Managers in general business organizations placed most emphasis on productivity and use of personnel; managers in research and development settings placed more emphasis on reliability and cooperation.

Weitzel, W., Mahoney, T. A., & Crandall, N. F. A supervisory view of unit effectiveness. California Management Review, 1971, 13, 37-43. First-line supervisors place more emphasis on productivity than do higher-level managers, who typically gave more importance to planning and reliability.

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Mapes, R. E. A., & Clarke, M. J. A path analytic model of psychiatric hospital performance. Social Science and Medicine, 1975, 9, 257-262.

Population: 99 non-teaching psychiatric hospitals

Effectiveness:

Conceptual: Performance with respect to goals with the notion of conflicting goals and different goals for different people.

Operational: Number of in-patients per 1,000 catchment population; patient turnover as [admissions + discharges + deaths]/[2 x average available staffed beds] per year; death rate per year as percent of patient population; discharge rates per average daily resident patients; number of new out-patients per year per 1,000 catchment population; number of new day patients per year per 1,000 catchment population; number of out-patient attendances per year per 1,000 catchment population; number of day-patient attendances per year per 1,000 catchment population; and ratios of out-patient and day-patient attendances per in-patient days.

Associated Variables: Environmental variables include hospital accessibility, social workers per 1,000 catchment population, and involvement with government and volunteer organizations. Professional variables include ratios of psychiatrists, nurses, and other professionals to patient loads. Institutional variables include occupancy rates, ward size, square footage per patient, and visiting policies. Institutional cost variables include costs of drugs, medical services, and laboratories. Out-patient costs include costs of drugs, costs of out-patient departments, and costs of treatment departments. Socio-medical variables include sex composition, age, marital status, and occupations of catchment populations and of admitted patients.

Methods:

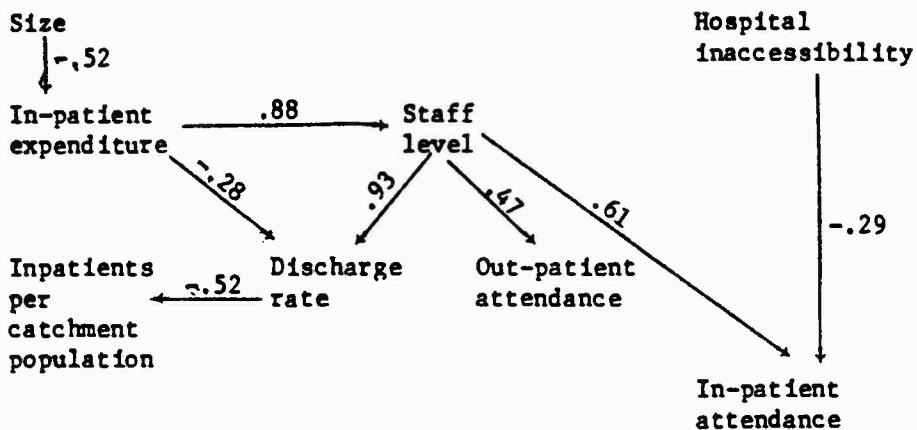
Level of data collection: Hospital

Level of analysis: Hospital

Source of data: Hospital records and official reports to government agencies.

Design: Path analytic

Results: Four explainer variables--hospital inaccessibility, overall professional and nursing staff level, overall in-patient expenditures, and hospital size--had significant path coefficients to four performance indicators--number of patients per 1,000 catchment population, discharge rate, total number of out-patient attendances per year per 1,000 catchment population, and total number of day-patient attendances per year per 1,000 catchment population. The path model is shown on the following page.



Marrow, A. J., Bowers, D. G., & Seashore, S. E. Management by participation.  
New York: Harper & Row, 1967.

Population: 1 manufacturing organization

### Effectiveness:

Conceptual: Not specifically defined; a goal attainment model with multiple goals including, for example, employee job satisfaction, productivity, and profit.

Operational: Return on capital invested, make-up pay (for operators who did not produce enough to earn guaranteed wage), production efficiency to standard, earnings above guaranteed wage, turnover, absenteeism, employee satisfaction with company and job, perceived job effort, satisfaction with pay, satisfaction with co-workers, managerial ratings of the company on 43 items from Likert's "Profile of Organizational and Performance Characteristics" with seven dimensions as follows: motivation, communication, interaction, decision making, goal settings, control and performance.

Associated Variables: Treatment consisted of technical change (redesign of jobs and workflow), earnings development program for operators consistently below minimum, operator training, building cooperation and trust through sensitivity training for manager and supervisors, joint problem-solving meetings at all levels, and increasing participation in management.

## Methods:

Level of data collection: Individual, organizational

### Level of analysis: Organizational

Source of data: Company records, surveys of members

Design: Pretest-posttest design with intervening change program

Results: Return on capital invested increased from -15 percent to +17 percent; make-up pay was reduced; efficiency increased from 89 percent of standard to 114 percent of standard; earnings above minimum wage increased; absenteeism and turnover decreased. Changes in employee satisfaction measures were generally small. Managerial ratings of the organization on Likert's "Characteristics" generally moved from System 1 or 2 (exploitative, autocratic) to System 3 (increased participation in decision making).

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Molnar, J. J., & Rogers, D. L. Organizational effectiveness: An empirical comparison of the goal and system resource approaches. Sociological Quarterly, 1976, 17, 401-413.

Population: 110 county government agencies

Effectiveness:

Conceptual: The achievement of official and/or operative goals and the ability to acquire scarce and valued resources.

Operational: Goal attainment as the ratings of top administrators, of their own and all other agencies, of how effective the agencies had been in the past year; resource acquisition as ratings from top administrators on interagency cooperation, collective activity, agency independence, orientation to resource investment with other agencies, resource outflow and inflow, and sharing resources with other agencies.

Associated Variables: Formalization as the presence of types of roles; autonomy as administrator perceptions of external sources of control; accountability as the presence of single vs. multiple authority.

Methods:

Level of data collection: Agency

Level of analysis: Agency

Source of data: Top administrators

Design: Correlational

Results: Self and peer (other agency administrators) ratings of agency effectiveness were not related ( $r = .03$ ). Both ratings are related to resource difference (outflow - inflow). Peer ratings are positively related to resource outflow. Administrative orientation to resource outflow. Administrative orientation to resource investment is positively related to both resource inflow and outflow. Formalization is positively related to investment orientation and resource inflow. Autonomy is negatively related to peer effectiveness ratings, investment orientation, and resource inflow. Accountability is positively related to peer rating. Goal clarity is positively related to everything.

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Nealey, S. M., & Blood, M. R. Leadership performance of nursing supervisors at two organizational levels. Journal of Applied Psychology, 1968, 52, 414-422.

Population: 21 nursing units in one hospital, 21 first-level and 8 second-level supervisors.

Effectiveness:

Conceptual: Not defined

Operational: Superior's ratings of unit performance in patient care, having adequate information, human relations, and global performance; facet job satisfaction of unit members.

Associated Variables: Various measures of leadership behavior, including Fiedler's Least Preferred Coworker (LPC) scale, subordinates' ratings of supervisors' performance on facets of job, and the Ohio State "structure" and "consideration" scales.

Methods:

Level of data collection: Individual, unit

Level of analysis: Individual, unit

Source of data: Unit members, first-level supervisors, second-level supervisors, second-level supervisors' immediate superiors.

Design: Correlational

Results: Least preferred coworker scores (LPC) of the second-level supervisors were positively related to global performance ratings. The relationships between first-level supervisors' LPC scores and superiors' facet performance ratings were all negative and nonsignificant. First-level supervisors' leadership behaviors, initiating structure and consideration, were positively related to employee facet satisfaction. Second-level supervisors' initiating structure was negatively related to employee satisfaction with supervision; consideration was positively related to employee satisfaction with supervision.

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Negandhi, A. R., Prasad, S. B., & Shetty, Y. K. Manpower management practices and organization of effectiveness: A cross-cultural study. Proceedings of the 32nd annual meeting of the Academy of Management, 1972, 1, 347-349.

Population: 15 American and 15 Indian manufacturing firms.

Effectiveness:

Conceptual: Not defined

Operational: An overall index of effectiveness combining interview measures of the organization's ability to attract and retain good personnel, employee satisfaction, absenteeism, interpersonal relations, departmental relations, executives' perceptions of "the firm's overall objectives", and the utilization of high-level manpower.

Associated Variables: Manpower planning, employee recruitment and selection, employee appraisal, training and development, and employee compensation and benefits all combined into an index of quality of manpower practices.

Methods:

Level of data collection: Organizational

Level of analysis: Organizational

Source of data: Unclear, perhaps one manager interviewed in each organization.

Design: Cross-cultural comparison, correlational

Results: Indian firms were less likely to undertake manpower planning practices; the manpower practices index was positively related to the effectiveness index.

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Neghandi, A. R., & Reimann, B. C. Task environment, decentralization, and organizational effectiveness. Human Relations, 1973, 26, 203-214.

Population: 30 manufacturing firms

Effectiveness:

Conceptual: Not explicitly defined, a natural systems approach

Operational: A "behavioral effectiveness" index comprised the ability to hire and retain high-level manpower, employee morale, turnover and absenteeism, interpersonal relationships, interdepartmental relationships, and the use of high-level manpower for planning instead of day-to-day operations combined as a mean score. An "economic effectiveness" index was composed of the average percent growth in sales and percent of net profit on capital invested, using high, medium, and low categories.

Associated Variables: Decentralization was measured as the number of levels of hierarchy, the number of loci of decision making, broad participation in planning, and the extent of information sharing combined into an index. Scope of concern was the sum of an executive's rating of the organization's concern for various constituencies in the task environment: employees, consumers, the community, the government, suppliers, distributors, and stockholders.

Methods:

Level of data collection: Organizational

Level of analysis: Organizational

Source of data: Company records, interviews of members, and observers (for decentralization measures)

Design: Correlational

Results: The decentralization index was positively related to both behavioral and economic indices of effectiveness. Total scope of concern was positively related to the decentralization index.

Comments: Note treatment of constituencies. Although the relationship of scope of concern to the effectiveness indices was not given, calculation from information in the article showed it to be negative and significant.

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Osborn, R. N., & Hunt, J. G. Environment and organizational effectiveness. Administrative Science Quarterly, 1974, 19, 231-246.

Population: 26 social service agencies under the same federal coordinating unit.

Effectiveness:

Conceptual: Goal attainment

Operational: Ranking of each agency by officials in the coordinating unit on overall unit performance and the attainment of goals previously specified by each agency.

Associated Variables: Task environment risk as the degree of heterogeneity among organizations with which the agency must interact on the dimensions of objectives (profit or nonprofit), goals (long-term vs. short-term), outputs, ownership, size, and structure; task environment dependency as the reliance of the organization on its environment; interorganizational interaction as the external orientation of the chief executive; all variables measured by questionnaire to chief executives of each agency.

Methods:

Level of data collection: Individual, agency

Level of analysis: Agency

Source of data: Officials in the central coordinating unit for overall ranking; chief executives of agencies for other measures.

Design: Correlational

Results: The effectiveness rating was positively related to task environment dependency and interorganizational interaction.

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Parker, T. C. Relationships among measures of supervisory behavior, group behavior, and situational characteristics. Personnel Psychology, 1963, 16, 319-334.

Population: 80 geographically decentralized warehouses in one company with a mean of 24 workers per warehouse.

Effectiveness:

Conceptual: Not defined, performance or productivity

Operational: Productivity as items processed per man-hour and errors per 1,000 man-hours.

Associated Variables: Situational variables included wage rate, union status of the warehouse, percent of male employees, community size, and warehouse size; attitudinal measures included questionnaire data from employees on recognition from supervisor, the instrumentality of job performance (security, opportunity), and Fleishman's Leader Opinion Questionnaire.

Methods:

Level of data collection: Individual, warehouse

Level of analysis: Warehouse

Source of data: Company and public records; questionnaire measures of employee attitudes.

Design: Correlational

Results: Productivity was negatively related to warehouse size and positively related to supervisory recognition and performance instrumentality; error rate was positively related to an "initiating structure" supervisor and warehouse size and negatively related to job security.

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Pinto, P. R., & Pinder, C. C. A cluster analytic approach to the study of organizations. Organizational Behavior and Human Performance, 1972, 8, 408-422.

Population: 227 organizational units from a variety of industries

Effectiveness:

Conceptual: Not defined

Operational: Rating of the overall effectiveness of each unit by its supervisor.

Associated Variables: Eighteen organizational-level behavior dimensions or components of effectiveness: (1) flexibility, (2) development, (3) cohesion, (4) democratic supervision, (5) reliability, (6) delegation, (7) bargaining, (8) results emphasis, (9) staffing, (10) decentralization, (11) planning, (12) cooperation, (13) productivity-support-utilization, (14) communication, (15) initiation, (16) supervisory control, (17) conflict, and (18) supervisory support of subordinates; five demographic characteristics of units included the primary function of the unit (production, sales, or other), the degree to which people worked in physical proximity to each other, skill and training required of employees, the technology (long-linked, mediating, or intensive), and the growth of the unit over the past five years. These two sets of variables were measured by surveying the managers of the units.

Methods:

Level of data collection: Unit

Level of analysis: Unit

Source of data: Surveys of supervisors and managers

Design: Cluster analytic, with comparisons of means among clusters

Results: Cluster analysis disclosed eight clusters of units on the 18 behavioral dimensions. There were significant differences among some clusters on the overall effectiveness rating. For example, the cluster with the highest effectiveness score was rated moderately on all 18 behavioral dimensions; the cluster rated least effective scored high on flexibility, cohesion, democratic supervision, delegation, bargaining, planning, productivity-support-utilization, communication, supervisory control, and conflict but low on development, results emphasis, staffing, decentralization, and supervisory support. Although there were significant differences among clusters on the five demographic variables, those differences do not appear to vary systematically with rate effectiveness.

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Pritchard, R. D., & Karasick, B. W. The effects of organizational climate on managerial job performance and job satisfaction. Organizational Behavior and Human Performance, 1973, 9, 126-146.

Population: 76 managers from two firms; one firm had five regional offices

Effectiveness:

Conceptual: Not defined

Operational: Rating of overall job performance of each manager by a managerial consultant; regional effectiveness (for one firm only) as ranking based on profit, volume, and market share.

Associated Variables: Eleven organizational climate variables included autonomy of managers, conflict among managers, social relations, structural specifications and formalization, level of rewards to managers, the dependency of rewards on performance, the organization's motivation to achieve, the prevalence of physical status symbols, organizational flexibility and innovation, decision centralization, and the supportiveness of the organization to managers, based on questionnaires to managers.

Methods:

Level of data collection: Individual, firm, regional for one firm

Level of analysis: Firm, regional

Source of data: Questionnaires to managers, rating by consultant, records.

Design: Correlational

Results: Regional effectiveness was negatively related to structural specification and positively related to flexibility and innovation. Managerial performance was positively related to the level of rewards and organizational motivation to achieve.

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Reimann, B. C. Organizational effectiveness and management's public values: A canonical analysis. Academy of Management Journal, 1975, 18, 224-241.

Population: 19 manufacturing firms

Effectiveness:

Conceptual: Effectiveness as goal attainment, competence as the potential for goal attainment.

Operational: Organizational competence as executive rating of how the organization achieves the following goals--profit growth, sales growth, attraction of good people, product quality, customer service, and employee satisfaction and morale; executive satisfaction as indicated by executive turnover.

Associated Variables: Using Osgood's Semantic Differential Scale, executives evaluated seven constituencies (national government, suppliers, consumers, the community, stockholders, creditors, and employees) on two dimensions, friendly-unfriendly and strong-weak, using five scales for each dimension. Situational variables included organizational size, organizational dependence on the environment, and the rate of technical change. Structural variables included centralization, formalization, and specialization.

Methods:

Level of data collection: Individual, organizational  
Level of analysis: Organizational  
Source of data: Interviews with executives  
Design: Correlational

Results: Each organization had a distinct public value system. Performance as rated by executives was positively related to strong-friendly values about national government, suppliers, creditors, and employees. Executive turnover was negatively related to values about suppliers, customers, the community, and overall public values. The performance rating was also positively related to overall positive public values. Neither executive turnover nor performance ratings were related to structural or situational characteristics of the organizations.

Comments: Note treatment of constituencies and diversity of value systems of organizations.

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Revans, R. W. Morale and effectiveness of hospitals. New Society, 1964, 2, 6-8.

Population: 20 hospitals

Effectiveness:

Conceptual: Not defined, morale and efficiency  
Operational: Length of patient stay

Associated Variables: Staff turnover and illness; ward atmosphere as the attitude of the ward supervisor to superiors and subordinates.

Methods:

Level of data collection: Individual, ward  
Level of analysis: Ward  
Source of data: Hospital records and questionnaires of ward members  
Design: Correlational

Results: Staff stability was negatively related to patient stay and positively related to ward atmosphere. Ward atmosphere was negatively related to patient stay.

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Ronan, W., & Prien, E. An analysis of organizational behavior and organizational performance. Organizational Behavior and Human Performance, 1973, 9, 78-99.

Population: 64 departments in one organization

Effectiveness:

Conceptual: Not defined, performance

Operational: Eighteen criteria of performance included the following:

(1) number of employees, (2) male/female ratio, (3) hourly/salary employee ratio, (4) cost reduction achieved from January to June, (5) average earnings per worker, (6) percent of new hourly employees, (7) percent of new salaried personnel, (8) termination rate of hourly employees, (9) termination rate of salaried employees, (10) rate of infirmary calls, (11) rate of lost-time accidents, (12) insurance claims rate, (13) salaried sick leave claim rate, (14) absence rate, (15) tardiness, (16) grievances, (17) disciplinary action rate, and (18) employees per salaried supervisor.

Associate Variables: None

Methods:

Level of data collection: Department

Level of data analysis: Department

Source of data: Company records

Design: Factor analytic

Results: Factor analysis disclosed seven factors among the 18 variables. A staff composition factor included male/female ratio, hourly/salaried ratio, and insurance claim rate (negative loading). A second factor appeared to represent size, and staff and cost reductions (negative loadings). New hourly and salaried employees both load negatively on a factor with tardiness rate loaded positively. A fourth factor, conflict or withdrawal, includes hourly employee termination rate, insurance claim rate, and grievances. An illness factor includes hourly/salary ratio and tardiness loaded positively and infirmary call rate and salaried sick leave rate loaded negatively. An absenteeism factor reflects a high ratio of hourly to salaried employees and higher absenteeism. The final factor, employee relations, includes number of employees and average earnings per worker loaded negatively and infirmary calls, grievances, and disciplinary action loaded positively.

Comments: The labels given to factors are those of the reviewer; the authors prudently refrain from naming them.

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Rosen, N. A. Open systems theory in an organizational sub-system: A field experiment. Organizational Behavior and Human Performance, 1970, 5, 245-265.

Population: 7 work groups in one organization

Effectiveness:

Conceptual: Not defined, group performance, achieving a dynamic equilibrium

Operational: Mean group productivity level (units produced) over a 12-week period.

Associated Variables: Questionnaire measures of worker cohesion to group, worker preference among foremen, worker consensus on foreman status, and money motivation; length of time particular unit has been in production.

Methods:

Level of data collection: Individual, group

Level of analysis: Group

Source of data: Company records, questionnaires to group members

Design: Quasi-experimental--pretest/change/posttest; correlational

Results: Before the experimental condition of reassigning foremen, representing negative feedback and disequilibrium, productivity was positively related to group cohesion, consensus on foreman status, foreman preference, and the length of time a particular unit had been in production. After the experimental treatment, pre-experimental productivity was negatively related to post-experimental productivity, and the relationships of productivity with cohesion, consensus, and foreman preference disappeared. After 16 weeks, relationships approached the pre-experimental state.

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Rowland, K. M., & Scott, W. E. Psychological attributes of effective leadership in a formal organization. Personnel Psychology, 1968, 21, 365-377.

Population: 58 work groups in two departments in one organization

Effectiveness:

Conceptual: Leadership effectiveness is achieving organizational goals by changing the behaviors of individuals and also by providing members with satisfaction.

Operational: Ratings of the quality and quantity of work group performance by each group supervisor's superior; questionnaire measures of group member facet satisfaction.

Associated Variables: Supervisors' superiors rated each supervisor, using the Leadership Opinion Questionnaire, on his or her ability to initiate and carry out sound proposals or decisions and on the goodness of those proposals or decisions. These measures were used to indicate the upward influence of supervisors with superiors.

Methods:

Level of data collection: Individual, group

Level of analysis: Group

Source of data: Work group members, supervisors' superiors

Design: Correlational

Results: Rated work group performance was positively related to the upward influence of supervisor and to member satisfaction with supervisor.

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Rushing, W. Differences in profit and nonprofit organizations: A study of effectiveness and efficiency in general short-stay hospitals.

Administrative Science Quarterly, 1974, 19, 474-484.

Population: 91 profit and nonprofit hospitals

Effectiveness:

Conceptual: Effectiveness is the degree to which the organization exploits its environment; efficiency is the ratio of inputs to outputs.

Operational: Effectiveness is measured as the correlation between the average daily cost per patient and the median family income of the community; efficiency is the bed occupancy rate and the ratio of production (direct patient service) personnel to nonproduction personnel.

Associated Variables: The classification of hospitals as profit or nonprofit

Methods:

Level of data collection: Organizational

Level of analysis: Organizational

Source of data: Hospital and community records

Design: Correlational, group comparison

Results: The relationship between average daily cost per patient and median family income is higher for profit ( $r = .53$ ) than for nonprofit ( $r = .15$ ) hospitals. Efficiency as occupancy rate is slightly higher for nonprofit hospitals. The relationship between the production/nonproduction personnel ratio and occupancy rate is higher for profit than for nonprofit hospitals.

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Schermerhorn, J. R. Information sharing as an interorganizational activity.  
Academy of Management Journal, 1977, 20, 148-153.

Population: 76 hospitals

Effectiveness:

Conceptual: Not defined, task accomplishment

Operational: Performance index as the sum of executive ratings of hospital performance in five areas--cost control, improving accessibility, increasing service comprehensiveness, improving quality of patient care, and improving administrative efficiency.

Associated Variables: The information sharing index was the sum of executive ratings of reported frequencies of sharing information with other hospitals about operating statistics, utilization statistics, wages and salary levels, policies, and fringe benefits. Hospital type was dichotomous between religious/government and community nonprofit hospitals. Hospital size was a logarithmic transformation of the number of beds. Location was rated on a rural-urban scale from the Standard Metropolitan Statistical Area Size Code. Administrator age and tenure were also collected.

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: Chief executives, public information

Design: Correlational

Results: The performance index was positively related to the information sharing index and to the tenure of the administrator. Administrator tenure was negatively related to information sharing.

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Seashore, S. E., & Bowers, D. G. Changing the structure and functioning of an organization. Ann Arbor: Survey Research Center, Institute for Social Research, The University of Michigan (Monograph No. 33), 1963.

Population: 3 experimental and 2 control departments in one organization

Effectiveness:

Conceptual: Not defined, implicit goal model

Operational: Productivity to standard (machine efficiency), waste rate, absenteeism, and employee facet satisfaction.

Associated Variables: The experimental treatment consisted of policy change and clarification, structural changes, member training, and skill development.

Methods:

Level of data collection: Individual, department

Level of analysis: Department

Source of data: Company records, surveys of employees

Design: Quasi-experimental group comparisons

Results: Improvements occurred mainly in questionnaires of employee facet satisfaction. Absenteeism increased in all departments but increased less in the three experimental departments. Waste performance improved plantwide. Machine efficiency also improved but was not testable for significance.

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Seashore, S. E., Indik, B. P., & Georgopoulos, B. S. Relationships among criteria of job performance. Journal of Applied Psychology, 1960, 44, 195-202.

Population: 27 stations in one firm, 975 individuals

Effectiveness:

Conceptual: Not defined, performance

Operational: Productivity as the station average of manhours over or under the time standard set to do a given job; effectiveness of individual workers as ranking by station manager; overall station effectiveness as the pooled rankings of each station by the manager's superiors; accidents as the number of chargeable accidents per individual aggregated for stations over a two-year period; errors as the average nondelivery rate over two years.

Associated Variables: None

Methods:

Level of data collection: Individual, station

Level of analysis: Individual, station

Source of data: Station managers, their superiors, and company records

Design: Correlational

Results: Station effectiveness rankings were positively related to the station averages of individual productivity and negatively related to station error rate. Station productivity was negatively related to station error rate. Individual-level rated effectiveness was positively related to individual productivity and accident rate and negatively related to individual error rate. Mean individual correlations within stations show similar patterns, although within-station correlations of productivity and error with ranked effectiveness indicate a lack of homogeneity (the range of correlations is from -.56 to +.88 for productivity and from -.74 to +.23 for errors), indicating a substantial station effect.

Comments: See also Georgopoulos and Tannenbaum

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Seashore, S. E., & Yuchtman, E. Factorial analysis of organizational performance. Administrative Science Quarterly, 1967, 12, 377-395.

Population: 75 insurance agencies

Effectiveness:

Conceptual: A hierarchical goal model with the ultimate (and unmeasurable) criterion of net performance of the organization over a long span of time, followed by penultimate criteria that are the outputs that may eventually be summed to equal the ultimate criterion, followed by a set of "key criterion variables", each subset of which completely determines a specific penultimate variable.

Operational: Seventy-six performance variables were collected. These variables constituted the sort of information any organization might keep to monitor various costs, types of business done, and individual employee characteristics and performance, for example, renewal premiums collected, number of agents employed, number of policies in force, and average new business volume per agent.

Methods:

Level of data collection: Agency

Level of analysis: Agency

Source of data: Agency records

Design: Factor analytic

Results: Factor analysis disclosed ten factors--business volume, production costs, new member productivity, youth of members, business mix, manpower growth, owner's personal management vs. selling emphasis, policy and client maintenance costs, agency productivity, and market penetration. Most factors were fairly stable over an 11-year period.

Comments: See also Bowers and Seashore.

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Smith, C. G., & Ari, O. N. Organizational control structure and member consensus. American Journal of Sociology, 1963-64, 69, 623-638.

Population: 32 stations in one firm

Effectiveness:

Conceptual: The extent to which an organization, given certain means and resources, achieves its objectives without incapacitating its means and resources and without placing undue strain on its members.

Operational: Effectiveness as the production manhours above or below standards for each station; employee satisfaction averaged for each station.

Associated Variables: Control as questionnaires of perceived influence; consensus as the inverse of the variance within stations to questions about time schedules, morale, skill of the supervisor, trust in the supervisor, and ideal control; hierarchical consensus as the agreement between levels.

Methods:

Level of data collection: Individual, station

Level of analysis: Station

Source of data: Company records, questionnaires to members

Design: Correlational

Results: Morale was positively related to the slope of the control graph (as the slope increases, more control at lower levels of the organization is indicated), total control, and station consensus. Station productivity was positively related to total control, consensus, and morale.

Comments: See also Seashore, Indik, & Georgopoulos, and Georgopoulos & Tannenbaum.

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Sorensen, P. F., & Baum, B. H. Organizational control and effectiveness in a voluntary association. Journal of Social Psychology, 1975, 95, 125-126.

Population: 30 volunteer clubs

Effectiveness:

Conceptual: Not defined

Operational: Questionnaire rating from members on "what kind of job the organization does as a whole".

Associated Variables: Control as the degree of influence exercised

Methods:

Level of data collection: Individual, club

Level of analysis: Club

Source of data: Questionnaires to members

Design: Correlational

Results: Rated effectiveness was positively related to total control and to consensus about the distribution of control.

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Student, K. R. Supervisory influence and work group performance. Journal of Applied Psychology, 1978, 52, 188-194.

Population: 40 work groups from one manufacturing firm

Effectiveness:

Conceptual: Not defined, group performance on multiple criteria  
Operational: Indirect costs (inspection, stock handling), maintenance costs, supply costs, performance to schedule, number of units rejected compared to standard, average piece-rate earnings per employee, excused absences, unexcused absences, accident rate, turnover, and number of suggestions submitted.

Associated Variables: Questionnaire measures of employee ratings of the amounts of referent, expert, reward, coercive, and legitimate power their supervisors possessed; incremental influence, the amount of power an individual has independent of his or her organizational role, was defined as the sum of referent and expert power.

Methods:

Level of data collection: Individual, group

Level of analysis: Group

Source of data: Company records, questionnaires to employees

Design: Correlational

Results: Mean group ratings of the referent and expert power of the supervisor have more relationships with the various performance measures than do legitimate, reward, or coercive power.

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Swartz, D. H. Organization effectiveness at Kamloops Pulp Mill: Intervention and results. Tacoma, Wash.: Human Resources Planning and Development, Weyerhaeuser Co., 1975.

Population: 1 plant

Effectiveness:

Conceptual: Not defined, a multiple criteria approach

Operational: Accident rate, number of grievances, labor unrest (number of labor-management meetings, an increase was good), and reported incidents of theft.

Associated Variables: Specific interventions designed to address specific problems.

Methods:

Level of data collection: Plant  
Level of analysis: Plant  
Source of data: Company records  
Design: Pretest-intervention-posttest, before-after comparison

Results: The interventions designed to improve the above conditions resulted in improvements.

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Tannenbaum, A. S. Control and effectiveness in a voluntary organization. American Journal of Sociology, 1961-62, 67, 33-46.

Population: 104 units in a voluntary organization

Effectiveness:

Conceptual: The extent to which an organization fulfills its objectives and preserves its means and resources.  
Operational: Ratings of the overall effectiveness of each unit by 29 experts from the national headquarters.

Associated Variables: Questionnaire measures from unit members about the actual and ideal control and the amount of influence for different levels in the units.

Methods:

Level of data collection: Individual, unit  
Level of analysis: Unit  
Source of data: Unit members, experts from headquarters  
Design: Correlational

Results: Rated unit effectiveness was positively related to the slope of the actual control graph (positive slope indicates that members at lower levels possess more control) and to the total amount of actual control at all levels. Ideal control was not related to rated unit effectiveness.

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Todd, J. Management control systems: A key link between strategy, structure, and employee performance. Organizational Dynamics, 1977, 5, 65-78.

Population: 2 branches of an accounting firm

Effectiveness:

Conceptual: Not defined, financial performance  
Operational: Growth in business volume over a five-year period

Associated Variables: Questionnaire and interview measures of employee ratings of clarity of the control system (goal specificity), the link between rewards and performance, individual influence and control.

Methods:

Level of data collection: Individual, branch

Level of analysis: Branch

Source of data: Company records, questionnaires and interview of employees.

Design: Group comparison

Results: In the branch with greater business volume growth, employees perceived greater clarity in the control system, stronger links between performance and rewards, and greater individual influence and control.

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Tripathi, R. C. A toxonomic study of organizations and their environments.  
Doctoral dissertation, The University of Michigan, 1972.

Population: 40 branch offices of a national brokerage firm

Effectiveness:

Conceptual: Not explicitly defined, productivity, member satisfaction, and absence of member strain.

Operational: Productivity as the branch's economic performance relative to other branches; member satisfaction with supervisor, work group, job, and pay; questionnaire measures of employees' loss of sleep and feeling nervous due to job.

Associated Variables: Environmental variables include size of the environment as population and number of households; resourcefulness of the environment as household buying power, sales activity, and income indices; yearly changes in size and resource of environment; competitiveness of the environment as turnover in personnel; differentiation in sources or parameters of information; perceived measures in environment; interorganizational relations as number of organizations that cooperate, number of organizations that compete, and the extent of cooperation; the organization's position with respect to other similar organizations; the degree of uncertainty and turbulence in the environment with respect to customer potential, investment patterns, behavior of competitors, potential for personnel, financial organizations, and laws and governmental regulations; and environmental constraints in terms of the availability of money to borrow, legal constraints, and governmental regulations. Measures of organizational structure include office size, heterogeneity of account executive activities, integration of subunits based on subunit contacts, measures of total control, and the difference between control at top and bottom levels.

Organizational process variables include communication in terms of adequacy, content, extent, and direction (vertical or horizontal); decision-making processes in terms of how objectives are set, the level of decision making, the extent of participation and information sharing, and the awareness of problems at lower levels; conflict resolution as how disagreements are handled and what modes of conflict resolution are used; leadership, both peer and supervisory, in terms of support, interaction facilitation, work facilitation, and goal emphasis; teamwork and cooperation; motivation to work of employees; how personal goals are set; the extent and manner of inter-departmental coordination; the extent of trust of supervisors and subordinates in each other; the characteristics of the office manager in terms of the extent to which he or she listens to employees, helps employees, makes prompt decisions, conducts good meetings, has accurate information on employee performance, uses expert power, and is satisfactory to employees; delegation of authority from office manager to subordinates; and performance emphasis in employee performance evaluation in terms of production, errors, getting new business, following rules, helping coworkers, and contributing to public relations.

Methods:

Level of data collection: Individual, branch

Level of analysis: Branch

Source of data: Company records, questionnaires to employees, and public information.

Design: Cluster analytic, correlational, cluster comparison

Results: Based on factor analysis of the organizational characteristics variables and profile analysis of the branches on the factors, four types of organizations were proposed--alpha, beta, gamma, and delta. Alpha branches tend to be large and managed participatively. They also score high on communication, participative decision making, coordination, and conflict resolution. Beta-type branches tend to be small and to be "benevolent authoritarian" systems. There is little participative decision making, cooperation, teamwork, or delegation of authority. Gamma branches are moderate in size and also benevolent authoritative. They are similar to beta branches except for allowing employees to set production goals, and they show moderate amounts of teamwork and cooperation. They are the least integrated of the four types. Delta branches are small and very participative in management, with a highly decentralized control structure. There tends to be much trust among members but little integration.

Four types of environments were empirically derived in a similar manner--eta, zeta, theta, and iota. Eta environments are characterized by available money, poor personnel potential, a lack of competition from other organizations, low rate of annual change in resources, and low potential for exploitation by the branch. Zeta environments are characterized by a lack of resources generally and moderate competition from other organizations. There is a moderate rate of change in the organizational environment with respect to resources but generally low turbulence and uncertainty in other aspects. Theta environments

show poor resources but high market potential, a high rate of environmental change but low uncertainty and turbulence. Iota environments have moderate resources, high personnel and market potential, and high uncertainty and turbulence.

None of the organizational characteristics dimensions--organizational processes, integration, control structure, office size, participation in goal setting, teamwork and cooperation, heterogeneity of task activities, delegation of responsibility, or emphasis on new business acquisition--are related to economic success, across all branches. When branches are broken down into different environments, branches in the theta environment show a negative relationship between economic success and control structure and positive relationships between economic success, office size, and participation in goal setting. Further, when branches are dichotomized as successful or unsuccessful within different environments, there appear to be different characteristics associated with success in different environments.

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Van de Ven, A. H., Walker, G., & Liston, J. Coordination patterns within an interorganizational network. Human Relations, 1979, 32, 19-36.

Population: 21 service agencies

Effectiveness:

Conceptual: The effectiveness of relationships among agencies is the extent to which agencies carry out their commitments and maintain relationships that are equitable, productive, worthwhile, and satisfying.

Operational: Survey measures of agency members' ratings of the effectiveness of the agency.

Associated Variables: Survey measures of agency members' ratings of the importance of other agencies in the study and the types of transactions most typical of the agency's relations with other agencies.

Methods:

Level of data collection: Agency

Level of analysis: Agency

Source of data: Surveys of members

Design: Cluster analytic, group comparison

Results: There were three clusters of closely connected agencies. The three transactions typifying the agencies were resource transactions, planning and coordination, and direct service. There were differences among clusters about the dependence on other agencies to achieve self-interest goals, the number of face-to-face contacts among representatives of the agencies, and the degree of formalization of agreements and of contracts. There were no differences in rated effectiveness among the clusters.

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Warren, R. D., Mulford, C. L., & Yetley, M. J. Analysis of cooperative organizational effectiveness. Rural Sociology, 1976, 41, 330-353.

Population: 153 farm cooperatives

Effectiveness:

Conceptual: Productivity, flexibility, and the absence of strain; determinants of effectiveness include the socialization of members, selectivity (i.e., care of selection) of members, and communication.

Operational: Manager's salary and total revenue; interviews of managers about adaptability of the coop.

Associated Variables: Interview measures from managers on the socialization of members, the selectivity for new members, communication, salience (the importance of the organization to its members), and role tension.

Methods:

Level of data collection: Individual, cooperative

Level of analysis: Cooperative

Source of data: Coop records, interviews with managers

Design: Correlational

Results: The nine-item adaptive effectiveness scale had a reliability of .69; the reliabilities of other scales were similarly high. Controlling for gross assets and the number of employees, adaptability was positively related to socialization, communication, and selectivity. Manager's salaries were positively related to socialization, communication, selectivity, and salience. Revenues were positively related to salience and negatively related to role tension.

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Willits, R. D. Company performance and interpersonal relations. Industrial Management Review, 1967, 8(2), 91-107.

Population: 20 small manufacturing companies

Effectiveness:

Conceptual: Not defined, performance

Operational: Economic measures of performance as profit, sales revenues, and units sold; questionnaire measures from executives of ratings of effectiveness at problem solving, level of success, and quality of management both for the executive's own firm and for the other 19 firms studied.

Associated Variables: Questionnaire measures from executives on the open communication of ideas and feelings, participation, job interest, trust, delegation of authority, and general satisfaction.

Methods:

Level of data collection: Individual, organizational

Level of analysis: Organizational

Source of data: Company records, interviews with executives

Design: Correlational

Results: Judgements of success from executives outside the organization were positively related to profit; judgements of success from executives inside the organization were not. Executive ratings of the open communication of ideas were positively related to performance measures; open communications of feelings were not related to performance measures. Participation was positively related to the internal rating of organizational success.

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Wilson, R. C., Beem, H. P., & Comrey, A. L. Factors influencing organizational effectiveness III. A survey of skilled tradesmen. Personnel Psychology, 1953, 6, 313-325.

Population: 33 production shops in one department of the U.S. Navy

Effectiveness:

Conceptual: Not defined, performance

Operational: The extent to which production standards were realized

Associated Variables: Questionnaires to employees on supervisory characteristics (helpfulness, sympathy, non-critical attitude toward subordinates, quality of judgement, self-reliance, lack of favoritism, and looseness of supervision), employee's own characteristics (self-improvement and ambition), relationships among employees (intensity of informal control and lack of informal pressures to restrict production), and the formalization of work procedures.

Methods:

Level of data collection: Individual, shop

Level of analysis: Shop

Source of data: Shop records, questionnaires to employees

Design: Correlational

Results: Effectiveness as meeting production standards was positively related to employee ratings of the helpfulness, sympathy, non-critical attitude, consistency, and self-reliance of their supervisors.

Comments: For a treatment of the same population and effectiveness criterion, see also Wilson, R. C., High, W. S., Beem, H. P., & Comrey, A. L. Factors influencing organizational effectiveness IV. A survey of supervisors and workers. Personnel Psychology, 1954, 7, 525-531.

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Zald, M. N. Urban differentiation, characteristics of boards of directors, and organizational effectiveness. American Journal of Sociology, 1967, 73, 261-272.

Population: 34 branches in the YMCA in the same metropolitan area

Effectiveness:

Conceptual: Not defined

Operational: Ratings by central office staff members of the overall effectiveness of departments, quality of programming, and board strength; percent of board members contributing more than \$50.00 per year, meeting attendance of board members, and direct participation of board members in programs.

Associated Variables: Demographic characteristics of the area each branch is located in include number of people employed in the area, number of people living in the area, median income of the area, and racial composition of the area. Board characteristics are occupational characteristics of the board members. Total branch expenses were also collected.

Methods:

Level of data collection: Individual, branch

Level of analysis: Branch

Source of data: Branch records, ratings from central office staff members, the branch executive secretary.

Design: Correlational

Results: The percent of board members who were business leaders, middle management, or professionals was positively related to performance measures. Branch expenses were positively related to performance measures.

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